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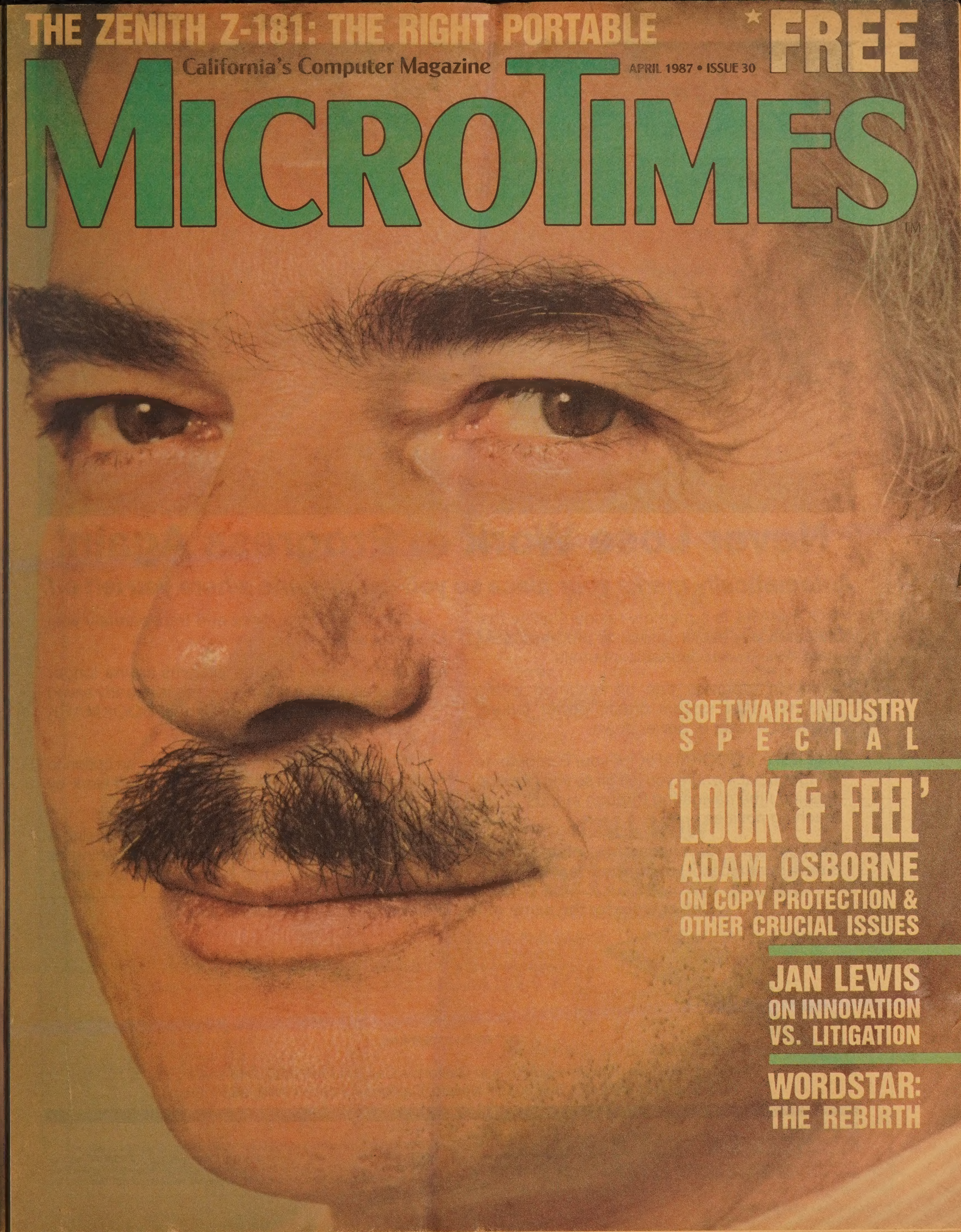

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ADAM OSBORNE
ON COPY PROTECTION &
OTHER CRUCIAL ISSUES

JAN LEWIS
ON INNOVATION
VS. LITIGATION

WORDSTAR:
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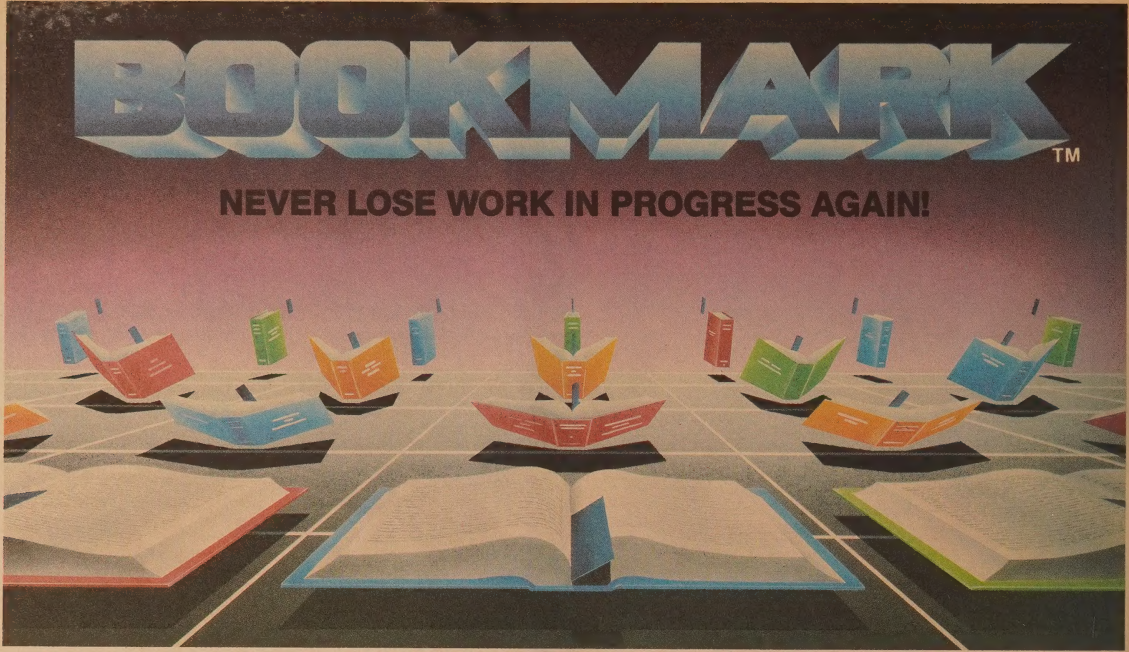
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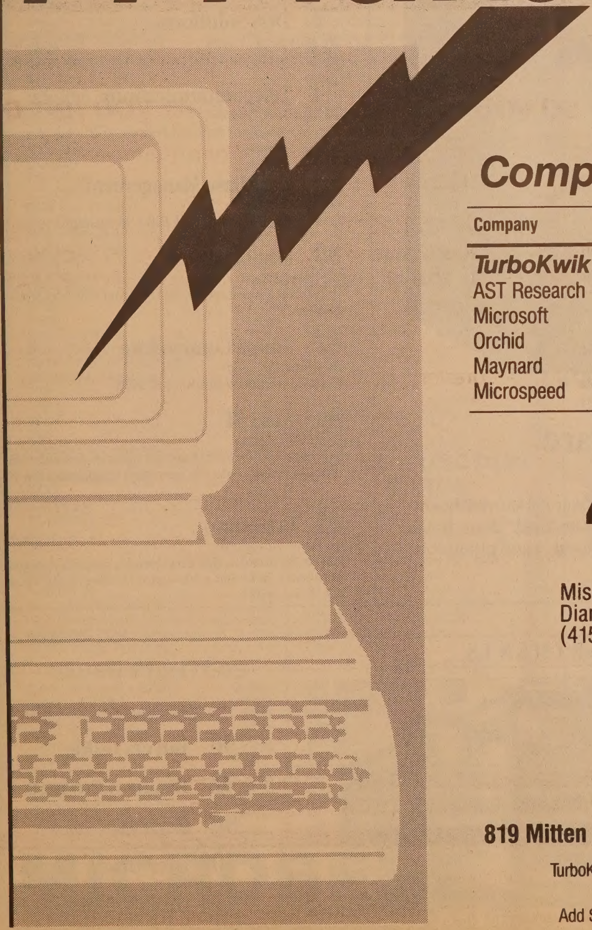

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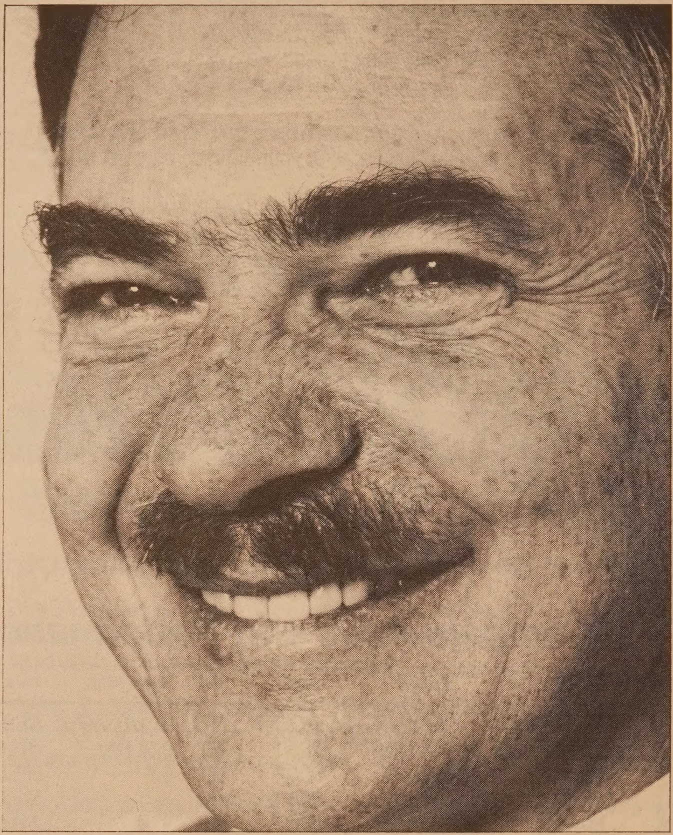

If Adam Osborne's worried about Lotus' landmark lawsuit, he's not letting on. See page 44.

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By Mary Eisenhart

The always-outspoken Adam Osborne, whose Paperback Software is currently embroiled in a legal dispute with Lotus over the controversial "look and feel" issue, holds forth on industry standards, copy protection, lawyers, and the rewards and pitfalls of the software industry.

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By Ed Kahn

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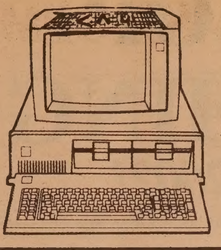

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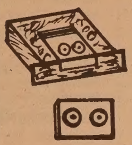

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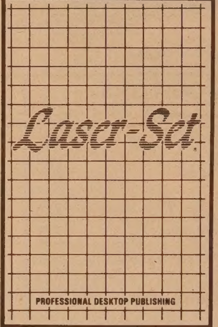

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EDITORIAL CONSULTANTS Don Hamilton, Pat Hamilton

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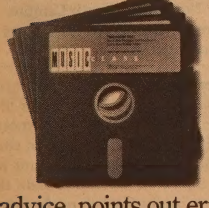

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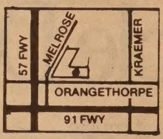

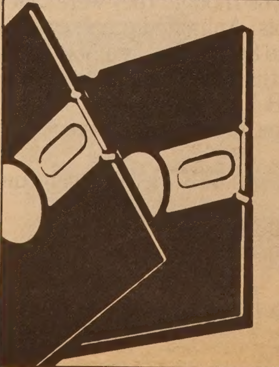

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March 5 Expert System Seminar. San Diego. Free, reservations required. Call mdbs, Inc., (800) 344-5832 for information and reservations.

March 7 Computer Swap. Fresno fairgrounds. Call (800) 252-7927 for information.

March 10-13 "Introduction to Digital Control." San Diego. Course sponsored by Integrated Computer Systems. Call (800) 421-8166 for information.

March 10-13 "Machine Vision and Image Recognition." Anaheim. Course sponsored by Integrated Computer Systems. Call (800) 421-8166 for information.

March 14 Computer Swap. Del Mar fairgrounds, San Diego area. Call (800) 252-SWAP for information.

March 21 Computer Swap. Los Angeles County fairgrounds, Pomona. **Call (800) 252-SWAP for information.**

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March 24-26 Optical Information Systems West '87. Conference. Los Angeles Airport Marriott Hotel. Call (800) 645-2182 for registration, (203) 852-0500 for information.

March 26-29 12th West Coast Computer Faire. Moscone Center, San Francisco. Call The Interface Group, (714) 476-2300 for information.

March 30-April 1 Data Cartridge Technology Conference. Marina Beach Hotel, Marina del Rey. For information call J & D Associates, (818) 906-9962.

April 4 Computer Swap. Orange County fairgrounds. Call (800) 252-SWAP for information.

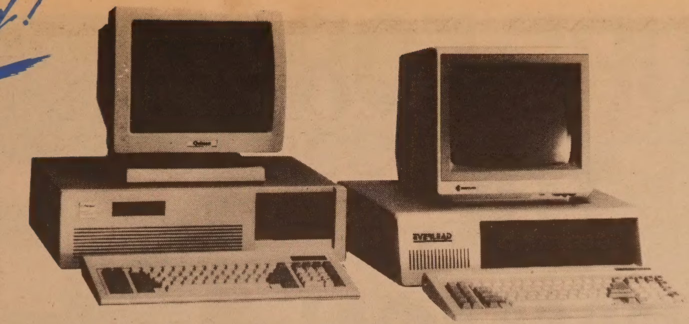
April 9-10 Western Educational Computing Workshops. San Jose State University, sponsored by the California Educational Computing Consortium. Contact Alexia Devlin, CECC Treasurer, San Francisco State University, Accounting Data NADM-358, 1600 Holloway Ave., San Francisco, CA 94132 for information.

April 11 San Fernando Valley Computer Swap. Cal State University Northridge, North Campus (formerly Devonshire Downs). Call Microshows, (800) 433-7469 for information.

As a community service, MicroTimes lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month , two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the March issue, distributed during February, is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

Take The Lead!



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LETTERS

Love That 386...

Thank you for the fine article by Ken Milburn ("The Third Generation PC") in your February issue. It was great to explore the mountain through the "blue haze" regarding the developing 80386 PC.

It was especially applicable for me because I'm trying to build an engineering PC around the 80386, 80387 and 82687/34010, all running at 16 MHz—hadn't heard of the 24MHz.

I'm having a hard time finding a 32 bit motherboard, so I'll be anticipating your upcoming story on "building your own mini."

Chris E. Ema, PE
Santa Ana

(Ken Milburn's article on building your own 386 is experiencing a slight delay due to slow shipping of parts; stay tuned. In the meantime, enjoy this month's PC Systems column on macro programs and other productivity enhancers.—eds.)

Revolutionary Update

Thank you for the review of *Cruise Control* in the February issue. With your help, we've caught some extra attention and given a boost to the speed of hundreds of California cursors.

One problem you mentioned—that DOS couldn't find *Cruise Control* in any directory but the root—we quickly fixed in a subsequent release. We had overlooked the fact that running a program outside the current directory is a feature added to DOS 3.x that is not available in DOS 2.x.

As you pointed out, a few programs like *SmartCom* cannot take advantage of *Cruise Control*'s features. We've found five or six applications that take total control of the PC that way, instead of working with it. That's too bad; some of our customers have grown attached to these programs, and really regret that feeling of being left behind the times.

Lyndon Silloway
Manager, Advanced Projects
Revolution Software, Inc.
Randolph, New Jersey

Another ST Heard From

With the advent of your new Atari ST column I become a dedicated reader of *MicroTimes*. Please find attached my check for a subscription.

It is gratifying to see the press start to take the ST seriously. I'm sure you realize that there are a lot of STs out there, and that there are going to be a lot more.

Further, I think it is important for a publication like yours to cover not only the IBM world, but also the world of alternatives. For it is very often the alternatives which both incorporate and prompt innovation and development.

Wayne Hurlbert
Oakland

Once More To The Barricades...

I just wrote to the FCC protesting "Computer Inquiry III," the proposed reregulation of packet-switching networks. Thanks to Brock Meeks ("Packetgate," February issue) for the timely warning and a great article.

Mark E. Smith
Berkeley

(For those readers who may have missed this column, "Packetgate" discussed the FCC's current plan to re-regulate packet-switching networks, a move that's likely to substantially increase costs—and consumer prices—of online networks like GEnie and The Source. If you'd like to be heard on this issue, write to The Honorable Mark Fowler, Chairman of the Federal Communications Commission, Washington DC 20554. —eds.)

Death Of CP/M: Reports Highly Exaggerated

Thank you for your continuing support of the CP/M operating system. Many of us continue to find it more than adequate for our needs, and we appreciate the service your magazine provides in offering product reviews and helpful hints.

George Meyer
Lomita

? For Help...

I really enjoyed Jan Lewis' column on UNIX ("In This Corner—UNIX," February issue). On the other hand, I completely agree with Ms. Lewis' assessment of UNIX as a bit user-hostile—I've been trying to figure out **!chmod go + wx / uh / 31 / maddog / unixvs*.compars.readme** for weeks.

Eugene A. Katz,
Oakland

Letters are heartily encouraged. Send electronic mail to **microx** *on The WELL, (415) 332-6106. Send US Mail to 5951 Canning Street, Oakland, CA 94609. Please include your real name and the city where you live. Anonymous letters will not be printed.*

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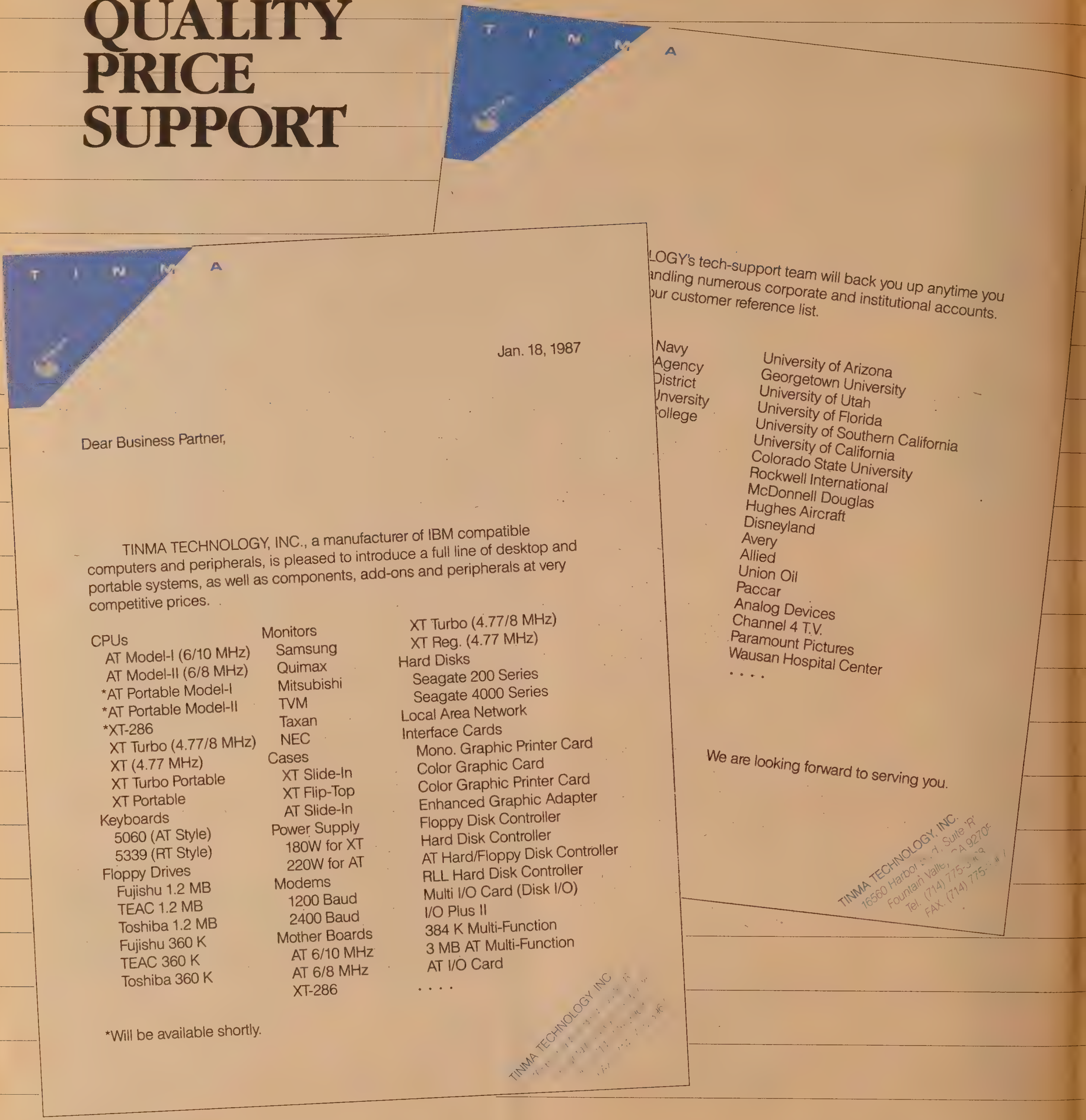

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BUT JAN LEWIS SAYS . . .

From Innovation To Litigation

Future news item: Ford Motor Company is suing General Motors over infringement of its driver interface. Ford lawyers claim that Henry Ford established the standard "clutch on the left, gas on the right, and brake in the middle" configuration on the Model T and that this pattern has been copied by the defendant without Ford's consent. A Ford spokesman says, "It's our gestalt."

Emulation may be the sincerest form of flattery, but current legal jockeying over look and feel says a lot about the future of the micro industry. Concepts are so vague that lawyers will be billing into the 1990s. (Imagine explaining to a jury the "gestalt" of one trash can icon over another!)

This conflict is a natural stage for a maturing industry. As garage-sized companies grow to megabuck bureaucracies, innovation is supplemented by litigation. Sure, improve the product, but for just a small investment in legal services, you can gain market share by scaring the competition.

For shareholders, issues are the same whether the product is a soft drink or toothpaste. After all, the company paid to develop the product and continues to pay to advertise and support it. Software is its intellectual property and the look and feel of screens is as identifiable as any trademark.

For example, Apple is determined to maintain its lead in desktop publishing. So if the company can stop or slow products from being ported to IBM, it can maintain its lead, not on the basis of quality, but on exclusivity. (You can almost hear the lawyers cry, "NeXT!") From Lotus's view, Paperback Software is nothing but a cream skimmer. Lotus did all the work and built the market. If the *VP-Planner* did not look and act like *1-2-3*, it would be far less salable.

Not only do these arguments add nothing for users, but they could actually raise prices by eliminating competition. Underlying these moves is a sense of family personality. The common user interface between Apple IIGS and Macintosh or the unifying Lotus interface to its numerous products is easy to identify. As I have said many times before, there are real benefits to "You already know how to use it" — even if the interface is a little clumsy. If the companies win their exclusivity (or bully the competitors with fear of costly legal entanglements) they also take on the responsibility to refine and improve. Of course, that can be a two-edged sword. In the long run (and that can be a long time), a company that demands rights to the look and feel, also gets the responsibilities: if the Lotus personality falls behind the power curve, the company will be so strongly identified with the interface that it too will fall behind.

> **If companies like Apple and Lotus win their exclusivity (or bully their competitors with fear of costly legal entanglements) they also take on the responsibility to refine and improve.**

But the negatives of the move from innovation to litigation are very strong. Without doubt, threat of legal action will stifle competition. Even in-house application developers are concerned about rights to products their company funded internally. Apple seems determined to control icon-derivative products, and this could weaken its position with third-party developers. The goodwill and free flow of ideas that built this industry could crash against legal restrictions and doubts.

Issues of intellectual property and copyright protection have always been difficult. Few support stealing another's work for profit. But right or wrong, when lawyers are called in, everyone's costs go up. Marginal companies will back off and investors will be gun shy. Raising the ante is a well-established way to attack competition — but I prefer attacking competition with better products, not more expensive lawyers. And that may be the ultimate reason to reject the "look and feel" arguments: the micro industry grows by doing it better, doing it faster, selling it cheaper, and making it available to everyone. I'd hate to see that change to "Sue the bastards!" ☐

Video Creates A New Kind Of User

I will confess to becoming a little jaded. I can still be impressed by the speed of a 386 PC or the new low, low clone prices — impressed but not excited. But the two graphics products, from Dan Silva and Arthur Abraham (*Deluxe Paint II* and *Amiga Live!*), are exciting: exciting visually; exciting as a market; and exciting for the future they promise.

As an industry matures, the pieces begin to fall into place that enable new products to multiply the effects of one another and create a new class of user.

The natural affinity the TV generation has for graphics, makes the merger of personal computers and video inevitable. PCs have been designed more for text and calculation than for handling high-resolution graphics. Video frame-grabbers have been either very slow or expensive. Tools to manipulate bit map images (particularly color) have been esoteric and complex. But with the introduction of the Amiga (despite Commodore's skimpy support) and the Apple IIGS, the basic graphics engines are cheap and fast. A-Squared's *Amiga Live!* pumps video images into memory and manipulates them in real time, while Silva's *Deluxe Paint II* delivers a box full of bit map tools customized to each machine. (And watching Silva play *Deluxe Paint* on the Amiga is like listening to Itzhak Perlman play a Stradivarius.)

The ability to combine real life images from video with computer control over contrast, color, shape, and time suggests many applications. After seeing a demo of *Amiga Live!* a golfer talks about using freeze-frame to analyze his golf swing; a retailer envisions building a video catalogue; a home video producer imagines the low cost, high impact special effects — desktop MTV. Artists see unlimited opportunities to play with color and motion, while desktop publishers can capture graphics not possible with a flatbed scanner. And it's a new way for millions to use TV.

> **Just as the personal computer expanded the number of users, the video computer invites a whole new class of user.**

Desktop video is the view from the personal computer — but computer integration and control over the television and its peripherals is the view from the home. For better and for worse, the world spends a good deal of time in front of the TV — just watching. These new tools make possible interaction: freeze and replay, frame by frame, a football pass interception, then print out the crucial instant; bring up a spreadsheet to balance the checkbook during the commercials; switch in the nursery camera to check on the baby; build a video game based on tonight's six o'clock news.

This diversity and enthusiasm makes me look forward to the possibilities. Video is truly the lingua franca of communications, and the impact will be multiplied by the data-handling and telecommunications power of the PC. So the video computer (intelligent TV? PCTV?) seems a natural, since all the major TV manufacturers already build PCs.

The creation of the video computer corrects a shortcoming of PCs that has been discussed in this column many times before: PCs come to you empty — you have to fill them with information and that turns users into typists. The cost of entry with graphics is even higher. But video fills the memory with images ready for the user to crop, color, add, annotate, subtract, delete, rotate, duplicate and manipulate.

Just as the personal computer expanded the number of users, the video computer invites a whole new class of user. Graphics is changing the demographics of computer usage, raising the visual ante.

So the battleground for the next generation of computer user is, in fact, television. And if your computer looks like TV, and your TV's as smart as your computer, you fly First Class. Just like the commercial. ☐

Jan Lewis is a well-known industry analyst and president of the Palo Alto Research Group, a consulting firm for the microcomputer industry. This article has been reprinted with permission from Computer Insider, *PARG's newsletter.*

Industry News

By Hartley Lesser and Patricia Lesser

Founder Levy Leaves Activision

Activision, Inc. (Mountain View, CA) has announced the resignation of James Levy, the company's CEO and president as well as founder. Bruce Davis has been named as his successor.

Apple News

Apple has announced the *Apple K-12 Curriculum Software Reference Guide for Science*. This is the first in a series of guides designed to help primary and secondary educators find the best software for their curriculum.

Apple will also make a donation of $250,000 to the Children's Discovery Museum of San Jose, CA. The money will support the creation of one of the museum's major exhibits, "Around the World Travel."

Sidekick With Commodore PCs

Borland International (Scotts Valley, CA) has reached an agreement with Commodore to bundle Borland's *Sidekick* desktop organizer with both of Commodore's newly introduced IBM PC compatible computers. This bundle is immediately available.

Datacopy Drops Prices, Bundles SuperPaint

Datacopy Corp. (Mountain View, CA) has reduced prices on its scanners and software products. The JetReader pagefeed scanner is now priced at $1,300; the Model 730 flatbed scanner is now $1,800. The software will be available individually as options and in kits which include software, host interface hardware, cables and manuals. Image processing kits for both the IBM and Mac computers are available from $595, and the OCR IBM kit is $895.

The company has also announced that it will be including *SuperPaint* painting and drawing software from Silicon Beach Software with the MacImage scanning and image processing systems.

Video Marketing From EA

Electronic Arts (San Mateo, CA) has introduced EA-TV, a VHS video cartridge that provides the viewer with a synopsis of all Electronic Arts software products scheduled to be released between now and the end of April, 1987. The products demo'd in the latest EA-TV are: *Return To Atlantis, HMS Pegasus, DeluxePaint II, Earl Weaver Baseball,* and *Dan Dare: Pilot Of The Future.*

Litigation In Lotus-Land

Lotus Development Corp. (Cambridge, MA) has filed suit against Paperback Software (Berkeley, CA) and Mosaic Software (Cambridge, MA), charging both with copyright infringement, false advertising and unfair trade practices. At issue are Paperback's *VP-Planner* and Mosaic's *The Twin* spreadsheet packages, both *Lotus 1-2-3* compatible. The suits were filed in the US District Court in Boston, MA, and seek injunctive relief and damages.

Mindscape Acquired

Mindscape, Inc. (Northbrook, IL) has been acquired by a newly formed corporation owned by John Purcell, chairman of Mindscape, and Roger Buoy, its president and CEO. Previously, the company was a subsidiary of SFN Companies, Inc.

Mitsubishi/Apple Interactive Marketing

Mitsubishi Motors (Fountain Valley, CA) and Apple Computer have joined forces and will tour America. The show will travel to over 100 regional malls across the country, permitting mall shoppers to choose options on a new car by personal computer. The computer pavilion will encourage mall shoppers to use one of six Apple IIc computers for an interactive color graphics program. Shoppers get to "build" their ideal Mitsubishi, choosing everything from color to transmission type. When this construction is completed the shopper receives a personalized printout similar to a dealer window sticker from the Apple ImageWriter II printer.

Symantec Acquires Breakthrough

Symantec Corp. (Cupertino, CA) has acquired Breakthrough Software (Novato, CA), the developer of the *Time Line* project management software program. Under the terms of this agreement, Breakthrough will be run as a division of Symantec, and the *Time Line* product series will continue to be sold under the Breakthrough name.

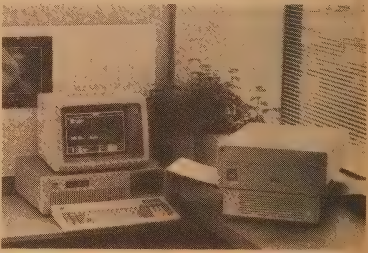
Turner Hall To Publish Cambridge Software

Turner Hall Publishing (Cupertino, CA) has announced plans to publish Cambridge Software Collaborative's *Spreadsheet Analyst, Macro Analyzer,* and *Spreadsheet Comparator.* Cambridge Software Collaborative was acquired by Synex International, the developer of Turner Hall Publishing's *SQZ!*, in December of last year. CSC's products will now be published and marketed by Turner Hall Publishing.

Apple Unveils AppleShare

Apple Computer (408/996-1010) has introduced *AppleShare*, a workgroup file server software package that extends the personal computing environment to a workgroup effort. AppleShare is designed for use by small companies, departments within larger firms, and university faculty and administrators. The server software is configured with a dedicated Mac Plus computer and a hard disk drive. As many as 25 users can access information from anywhere on an AppleTalk network as if it were resident on their own Macs. *AppleShare* is the first product to incorporate Apple's published standards for the AppleTalk Filing Protocol (AFP). ($799)

The AppleShare file server configuration is simple and flexible, using a dedicated Mac and hard disk as a file server.



Using the AppleTalk PC card, IBM PCs and Macs can be linked on the same AppleTalk network.

Apple also announced communications products to expand the Macintosh concept into workgroups and integrate and enhance information from other computing environments:

The **AppleTalk PC Card** permits MS-DOS PCs to share information on the Apple network and access Apple's LaserWriter.

The **AppleLine 3270 File Transfer**, a software utility for transferring files between the IBM 3270 mainframe and Macintosh via Apple's 3270 protocol converter AppleLine.

Hartley and Patricia Lesser are veterans of computer publishing, having published over 500 feature articles and reviews in computer magazines worldwide and assisted in founding four national computer publications, including inCider. *They have also worked at* PC World, *Softalk Publishing, and several other publications, and founded two online computing magazines,* MicroToday *and* Corporate Computing. *They currently publish and edit* Computing Today! *a weekly computer magazine on the GEnie personal network and the NewsNet business network. They can be reached at (415) 828-1528.*

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Apple DCA (Document Content Architecture) Filer is a utility that translates documents from popular MS-DOS word processing applications to and from MacWrite.

In related news, the following companies and their attendant product lines have announced support for AFP:

3Com Corporation (415/961-9602) with an Apple Mac version of its 3+ network operating system

Alisa Systems (Pasadena, CA) also plans to support The Apple Communications Framework, including AppleShare File Server protocols, in the next release of its file server for VAX/VMS. The Alisa file server is part of the AlisaTalk package currently marketed by Alisa Systems to DEC VAX owners who wish to use their VAX superminis on the AppleTalk network.

AST Research, Inc. (714/863-1333) with support of the AppleShare file server software with its ASTK-4000 hard disk subsystem.

Blyth Software (415/571-0222) has announced a multiuser version of *Omnis 3 Plus* compatible with AppleShare file server software. The new AppleShare version supports the Apple Communications Framework and allows multiple Appleshare users to simultaneously access the same *Omnis 3 Plus* database applications. The product should be available in the first quarter of 1987. Other networks on which *Omnis 3 Plus* is supported include OmniNet, Sunol, HyperNet, Keeper Plus, EtherMac, MacServe and TOPS.

Centram (415/549-5900) with the introduction of *TOPS Repeater* and *TOPS Star*, two products to increase the size and length of an AppleTalk bus network. *TOPS Repeater* extends the length of the AppleTalk network by overcoming the AppleTalk bus restriction of a maximum length of 1,000 feet. This product receives incoming network signals, regenerates them, and then re-transmits them at full voltage. *TOPS Star* transforms bus networks into star topology. ($189 and $1,500, respectively). Centram has also announced that *TOPS* and *TOPS Print* now support the Apple Communications Framework. Centram products also work on the AppleTalk PC Card and are compatible with AppleShare file server products.

Corvus Systems, Inc. (408/559-7000) has announced a new product for its Omninet LAN that provides full support for AFP and will provide full support for AppleShare.

Diversified I/O, Inc. (408/730-2171) has introduced *SoftBackup*, a standalone software product that backs up files to tapes or diskettes and supports the Apple Communications Framework. *SoftBackup* enables a user to store information to a tape or diskette drive directly connected to his or her Mac, or to a tape drive connected to the AppleShare file server. *SoftBackup* permits AppleTalk network users to share the cost of popular SCSI tape drives. ($69.95 for standalone, $139.95 for AppleTalk version)

Du Pont (302/992-5212) has designed and introduced a fiber optic LAN for AppleTalk that allows fiber optic replacement or extension of the standard copper wire twisted-pair cabling system. The Du Pont fiber optic LAN is modular and consists of a shielded cable assembly linking each computer or peripheral with an electrical/optical signal converter, into which an optical cable is terminated. One hundred stations, or more, with each as much as 4,900 feet apart, can be linked, depending upon system traffic.

Farallon Computing (415/849-2331) has made additions to the PhoneNET product line that support the Apple Communications Framework and the AppleTalk network. The StarController makes it possible for AppleTalk networks to be wired in a star topology; the StarController Management Option allows a network manager to monitor network status; The PhoneNET-AppleTalk Repeater allows network cable length to be extended several miles; PhoneNET Plus Connectors support higher network speeds; PhoneNET TrafficWatch software is a comprehensive set of network analysis and debugging utilities.

Forethought, Inc. (408/737-7070) announced that *FileMaker Plus* will support AppleShare. ($295)

Great Plains Software (701/281-055) introduced *The Network Manager*, a product that supports ACF and allows the company's Accounting Series for the Mac to run as multi-user software utilizing the AppleShare file server. ($395 for the Manager, $695 for the accounting software)

Infosphere, Inc. (503/226-3515) has announced ComServe, the first modem server for AppleTalk networks, which also provides terminal communications to Mac LANs. ($195)

InterSuivi (514/481-4874) offers *Management by Commitment* to run on Mac LANs, including a set of effective management tools, an interactive coaching module, and comprehensive support material.

Layered Software (617/423-9041) supports the AppleShare File Server and AppleTalk with a version of its *Insight Accounting Series* being fully compatible with this new communications capability.

Letraset USA's (201/845-6100) *Ready,Set,Go!* now supports the AppleShare file server system and also works with several third party offerings, such as TOPS and MacServe.

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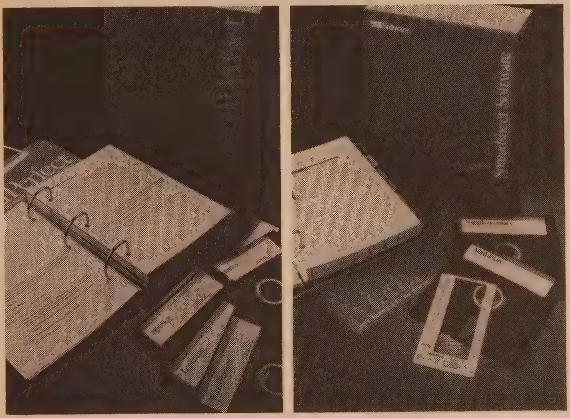

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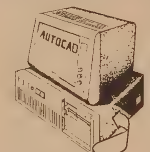

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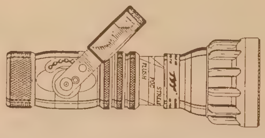

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Microsoft (206/882-8080) has announced that MS *Word 3.0* for the Mac will take full advantage of the AppleShare network, making it the first Mac word processor optimized for Macintosh network environments. This support takes effect immediately with the shipment of MS *Word 3.0* and will be extended over time to other Microsoft applications for the Mac, such as *Excel*. MS *Word* was optimized for the AppleShare network by including special features such as file sharing. A read-only mode can be specified in *Word's* dialog box so that users in a work group can review the same document without altering the original. The software can be installed on the file server and accessed simultaneously by several users.

Odesta (415/962-8661) *MultiUser Helix*, *Double Helix* and *Helix VMX* software products fully support AppleShare server software.

PCPC (813/884-3092) has announced *HFS Backup* for AppleShare, a multiuser version of its *HFS Backup* archival utility for Macintosh hard disks. The new version is designed for workstations on AppleShare. The program makes copies of hard disk files and folders and stores them on floppy disks for safekeeping. Recent improvements in the program include greatly enhanced speed, expanded use of the Mac graphic interface, and a file "filter."

Pacer Software, Inc. (619/454-0565) introduced *PacerPrint*, a package that allows a DEC VAX running VMS operating system to function as a server for PostScript compatible printers, through support of ACF.

Reach Technologies Inc. (512/280-1977) has new enhancements to its network server family which now supports ACF. New products include *Nucleus*, which runs as a true file server for the AppleTalk network. ($1,595)

Satori Software (206/443-0765) unveiled a multiuser version of its *Project Billing* and *Legal Billing II* for the Mac, now utilizing the AppleTalk network and the AppleShare file server.

RUMORS

- As desktop publishing continues to grab more and more market share, more and more companies are becoming involved. For the Mac user, it appears as though *PageMaker* from Aldus may get a run for the money—this time due to an expected offering from Target Software called *Scoop*. The program can manage newsletters, catalogues and the like with the same convenience as *PageMaker*, but you can also set text to conform to the dimensions of any object. Graphics and text can be treated as a single object.
- Stock traders take note—odds are that the president of Epyx, Inc., a home software company based in Redwood City, will announce a public stock offering later this year.
- We can nearly guarantee that Hewlett-Packard will be releasing two new LaserJet printers and a scanner, sometime during the first quarter of this year. And these new printers'll knock your socks off, both performance and cost-wise!
- Keep your eyes on Commodore, 'cause they're going to be releasing two new Amiga models sometime during the second quarter of this year, with both machines being targeted for niche markets. One will run in the $600 range and will be the Amiga 500, aimed at the home user. The second new machine is rumored to be the Amiga 2000, the "high-end" Amiga, selling for around $1,500. This latter machine'll pack nine expansion slots, allowing for that PC compatibility board. And you know what else might occur? Just like Atari, Commodore is thinking about—a laser printer!

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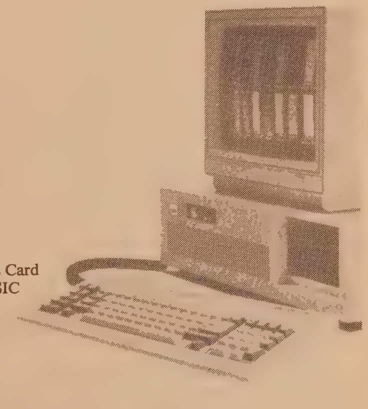

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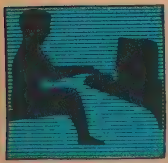

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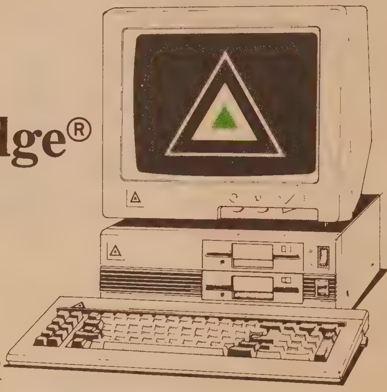

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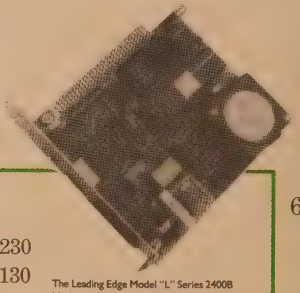

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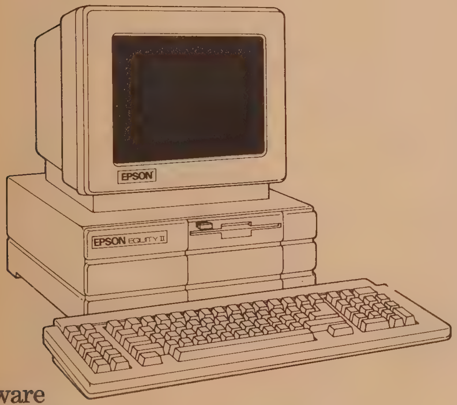

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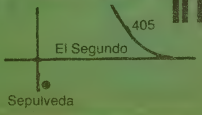

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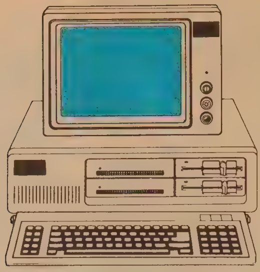

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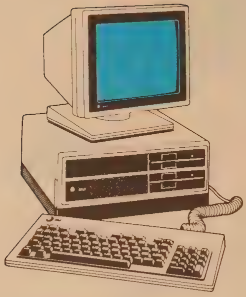

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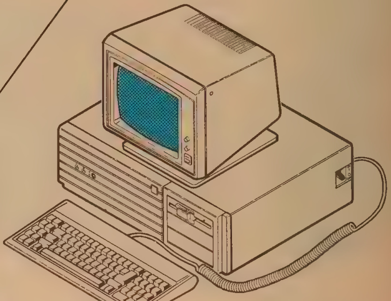

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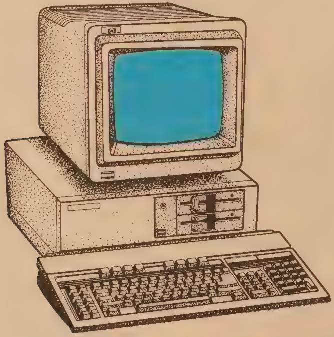

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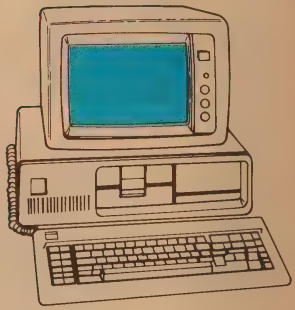

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Softview, Inc. (805/388-2626) has updated the *MacInUse* product to support ACF, with *MacInTax* also available in a LAN version.

Solutions, Inc.'s (802/229-0368) *Glue* now allows for Image Sharing between users utilizing AppleShare.

SuperMac Technology (415/964-8884) announced a line of SCSI hard disk drives fully compatible with AppleShare.

Tangent Technologies (404/662-0366) introduced the PC MacBridge/AFP, a software package that allows IBM PCs access to Apple's AppleShare file server.

THINK Technologies, Inc. (617/863-5595) offers InBox for the PC, which allows people working with Macs on AppleTalk networks to communicate with others working on IBM PCs and compatibles on AppleTalk networks.

NEW PRODUCTS

APPLE II FAMILY

Accolade Comics

Accolade (408/446-5757) has released *Accolade's Comics*, the first interactive comic book. Featuring two distinct themes and dozens of major and minor story lines, incorporating eight arcade-like games, this program is the story of a spy named Steve Keene whose mission is to foil evil plots for the Chief of Spystuff, Inc. *Accolade's Comics* offers the user the experience of reading a comic book on a computer screen, combining detailed graphics and humorous animation. ($44.95)

Ring Quest

Electronic Arts (415/571-7171) has released *Ring Quest*, a fantasy adventure game from the creators of the *Ultima* Series, Origin Systems. *Ring Quest* involves players in a fictional world of fantasy and magic where they must solve puzzles through shrewd management of the game environment. Two games of skill are included in the game to test the player's skill and endurance. ($19.95)

Amazing Software

Electronic Arts (415/ 571-7171) has announced an all new Amazing Software line of modestly priced products aimed at 12-to-16 year-olds. There are also six additions to its Software Classics line of value software. Amazing Software is aimed at the teen male market, with emphasis on great graphics and lots of action, all for a price of under $20. Quality import titles from around the world will be used, as well as original products developed in-house. Amazing Software will be produced exclusively for the Apple II and Commodore 64/128 market, with the launch to encompass two new products: *Dan Dare, Pilot Of The Future*, and *Dark Lord*.

Dark Lord is a graphic adventure that features

Correction:

In our last news column, we discussed clip art for desktop publishing on the IBM PC. In the process, we erroneously gave a software publisher's name as PC Clip Art. The software in question, which offers a large library of clip art for this environment, is in fact called *PC Quik-Art* and is published by PC Quik-Art Inc., 394 S. Milledge Ave., Suite 300, Athens, GA 30606. PC Quik-Art's phone number is (800) 523-1796.

We apologize to PC Quick-Art and anyone else who has been inconvenienced by this inadvertent error.

—eds.

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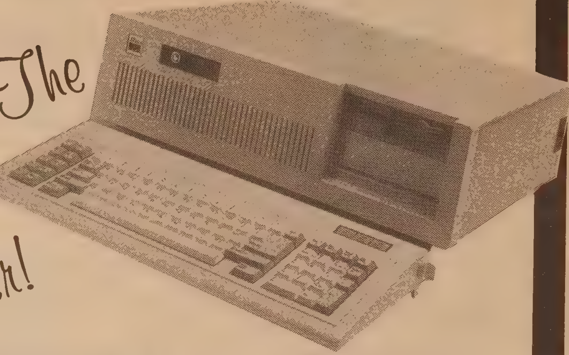

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high-speed color graphics and animation, as well as over 80 game locations. An evil wizard has risen from his grave to enslave the Alterworld, and only ingenuity, cunning and a touch of magic can end the tyranny.

New From Epyx

Epyx, Inc. (415/366-0606) has introduced *Sub Battle Simulator*, the first title in the company's new Masters Collection series. This offering is a detailed and completely realistic submarine war simulation. The game puts players in command of any one of six different classes of US Navy submarines or German Kriegsmarine U-Boats during the period 1939-1945. Players can choose from over 60 different single missions staged in either the Atlantic or Pacific, or play out the entire war. Each mission is based on genuine historical data.

Street Sports Basketball is a second offering. The Street Sports line represents a novel approach to sports software in that it recreates those winner-take-all, playground pick-up games enjoyed by kids of all backgrounds. With this game, players pick their three person team from 10 very different individuals. There are also four different neighborhood scenes, and obstacles such as curbs, oil slicks and fences.

Create A Calendar is a new, easy to use program that's perfect for those who want to design their own daily, weekly, monthly or yearly calendars up through the year 9999. This program offers an assortment of calendar types and a wide variety of decorative fonts, borders and graphics suitable for almost any occasion. Graphics from the Epyx *Graphics Scrapbook* series or *Print Shop* compatible graphics disks can also be used.

Epyx is also releasing the next chapter in the *Graphics Scrapbook* series. *Chapter III: School* contains graphic images perfect for students, teachers, school administrators and PTAs. The art is for newsletters, banners, flyers, cards and posters, and covers subjects from geometry to driver's education, student body elections to band practice, school plays to cheerleading tryouts, dances, fund raisers, rallies, graduation and much more.

More For The Teen Gamer

IntelliCreations, Inc. (818/886-5922) will release *Saracen* and *Black Magic*. Recent action/strategy and action/adventure games are usually geared toward an audience in the 26-38 age range, whereas these two releases are specifically for the 10-18 year old group. Pricing will reflect the age group; there are over 100 individual screens in *Saracen* and *Black Magic* to keep players on their toes.

AppleWorks For Visually Impaired

RC Systems, Inc. (206/ 672-6909) is introducing the *AppleWorks Companion*, a program which gives visually-impaired Apple II users full access to *AppleWorks*. The program enhances the *AppleWorks* word processor, data base and spreadsheet by providing oral keyboard feedback and full screen-review features. In this manner the user can "see" what is on the screen by using special commands that are added to *AppleWorks* by the *Companion*. The user can also have any file read to him before it is printed.

ATARI

3D On The ST

ANTIC Software (415/957-0886) has debuted a breakthrough in real 3D viewing. The system includes "Stereo Tek" electronic liquid crystal shutter glasses, which are plugged directly into the cartridge port of an Atari ST computer. Two

PC PORT CONTROLLER

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PORT 1
PORT 2
PORT 3
PORT 4
PORT 5
PORT 6
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PORT 8
PORT 9

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Read Jan Lewis

Every month in the pages of MicroTimes, industry expert Jan Lewis of the Palo Alto Research Group offers topical analysis of industry issues and trends. Check "But Jan Lewis Says . . ." in this issue.

optical shutters in the eyeglass frames are connected electronically to the ST. Every time the ST screen refreshes, one shutter closes and the other opens. The monitor displays alternating right and left eye views synchronized with the shutter. This creates alternating views faster than the eye can see, and the brain translates the normally flat monitor image into one of impressively realistic depth. One MB of graphics can be viewed every second, at a frame rate of up to 60 frames per second, which is 2-1/2 times faster than the speed of a movie. These 3D glasses must be used with 3-D software developed by ANTIC and other Atari ST software publishers.

One of the first programs to use the *Stereo Tek* glasses is *CAD 3-D*, 2.0, written by Tom Hudson, who also wrote *D.E.G.A. CAD 3-D* provides tools for creating 3-D objects or scenes and viewing those objects or scenes from different angles, distances and perspectives. ($199.95)

Chessmaster 2000

Electronic Arts (415/ 571-7171) is introducing *The Chessmaster 2000*, winner of the 1986 U.S. Open Personal Computer Chess Championship, for Atari ST computers. The *Chessmaster 2000* is based on an algorithm that was rated at 2,018 by the U.S. Chess Federation. It contains the largest opening move library ever available on a microcomputer. There are 12 levels of play, ranging from Newcomer to Grandmaster, as well as a Teach Mode and a Hint Mode. *2000* also acts as a referee, and its graphics and voice synthesis capability are quite impressive. The board can be viewed with a two- or three-dimensional display, and the 3D board can be rotated to see the play from any angle.

Lotus 1-2-3 is now available in college and university bookstores in a special student edition.

1-2-3 Student Edition

Addison-Wesley (617/944-3700) has introduced *Lotus 1-2-3 Student Edition,* an educational version of the world's most widely used business productivity software. The software, developed by Lotus Development Corp., will be marketed, documented and distributed to the higher education market exclusively by Addison-Wesley. The *Student Edition* is a fully functional version of *1-2-3* that has been customized by the company for instructional applications. Extensive teacher and student manuals included with the product provide instructor-designed lab exercises for use with college courses. Spreadsheet capacity is 64 columns and 256 rows, whereas the standard *Lotus 1-2-3* has 256 columns and 8192 rows. This version will be sold through college bookstores at a pricing expected to be under $50.

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What's Happening?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

MRCA-Mach 2

Firebird Licensees has released *MRCA–Mach 2* for Atari 8-bit computers. This is a combat flight simulator based on the USAF F-15 jet fighter. The program has 3-D cockpit displays, a full complement of aerobatic maneuvers, air-to-air combat, crosswinds, turbulence, blind landings, training modes and pilot skill ratings. The program utilizes a joystick in port 1 for game-play and comes with a full-color poster of the jet. ($24.95)

New MichTron Releases

MichTron (313/334-5700) has announced several new releases for Atari computerists. The first is *GFA BASIC*, a high level language for the Atari ST that is as easy to program as BASIC, yet offers full access to system features and an execution speed that rivals assembly language. The program offers the user a BASIC interpreter which is very compact at only 55K of RAM. The Interpreter needs less than a half a second to carry out an empty FOR-NEXT LOOP 10,000 times. Many other features are included. ($79.95)

The company has also announced *Karate Kid Part II*, developed by the English company Microdeal. *Karate Kid II* tests your skill and bravery in the world of life and death karate competition. There are no trophies, no points, no referees—this world has no rules, no laws. To win is to survive. You must guide young David through fight after fight against increasingly powerful adversaries. When you have completed these tasks, you then face the evil Chozen himself in the majestic castle of King Shohashi. You must discover the secret of the drum—or die. ($39.95)

The third offering is *Match Point*, the largest selling computer game in Europe. This is a new and completely realistic tennis game that simulates every aspect of tennis with incredible graphics, true to life scoring, and three-dimensional playing screen. The player movement is both fluent and realistic. Along with a full stadium of fans, and line judges to call the close ones, *Match Point* even features ball boys to retrieve the net shots and a score board to keep track of the game statistics. For the Atari ST. ($39.95)

The fourth new program is *TRIMbase*, a data management system that operates much like an ordinary card filing system. The program keeps a set of record cards on which you can write such information as names, addresses, personal or business details, class and exam results, birthdays, or any other information you may need to record. The program takes only seconds to find all the records you wish to review. Reports can be produced both as tables and text and *TRIMbase* is capable of exchanging data with other software applications. ($99.95, introductory price - $150 normal retail)

Other new MichTron offerings include: *GFA Çompiler*, a BASIC Compiler; *GFA DRAFT*, a 2-D drafting program; *Journey To The Lair*, the driver for the arcade video disk game *Dragon's Lair*; *Laser Driver*, the GDOS drivers for the Quadram, Hewlett Packard and PostScript laser printers; *R.A.I.D.*, a new debugger for programmers; *Realtizer*, a new digitzer from Print Technique that the company will be distributing in the United States; *Shuttle II*, a new space shuttle simulator; and *SuperDirector*, a new disk cataloguer.

The Graphic Artist 1.52

Progressive Computer Applications, Inc. (301/340-8398) has announced Verison 1.52 of *The Graphic Artist*. This upgraded offering provides a print queue and includes more printer and plotter drivers. It also includes improved driver editors which allow the user to easily support virtually any dot matrix printer, including 24 pin printers, laser printers and plotters. In addition, version

1.52 displays the last mouse coordinates displayed while coordinates are typed in, and features improved pathname syntax checking, printing tips, more precise text margin alignments, and over a dozen other improvements. ($79.95)

Software From Regent

Regent Software (818/882-2800) offers a comprehensive inventory control system, with custom reporting and sales projections based on sales history. This program, entitled *The Inventory Manager*, offers purchasing projections based on seven user-definable parameters. Eleven inventory reports are built in, and an additional capability offers generation of Custom Reports. Some additional features include tracking of up to 40,000 parts, 16 digit part numbers and descriptions as well as other extras.

Regent also has a new version of *Regent Base*, a relational GEM database for the Atari ST. There are 25 new commands, a GEM based Utilities program, and new applications. *Regent Base* is the only relational database for the Atari, and the only GEM based database for the ST with a complete procedural language using the Sequel language. The new Utilities program gives users ten new functions to manipulate and modify *Regent Base* using only the mouse.

COMMODIRE/ AMIGA

PHM Pegasus

Electronic Arts (415/571-7171) has introduced, with Lucasfilm Games, *PHM Pegasus*, a combat simulation game involving the player in an unusual form of naval combat—using hydrofoil missile craft. Players control their own hydrofoil as they battle in oceans with numerous enemy vessels in any of eight different combat assignments. ($39.95)

LoDOWN WORM
LoDOWN

LoDOWN's WORM connects to the Mac's SCSI port and brings optical laser disk technology to the Macintosh.

WORM For Mac

LoDOWN (408/438-7400) has announced the first high capacity WORM 400 MB or 800 MB optical laser disk for the Macintosh. The LoDOWN WORM connects to the high speed SCSI bus with one simple cable and offers the most reliable data storage protection. The projected life of optical media is 10 years. LoDOWN's Optical WORM controller features a sophisticated error correction technique that provides the end user with a bit error rate of less than 10-12 at the media life of 10 years.

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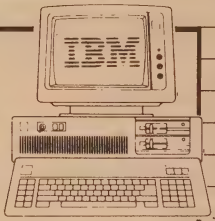

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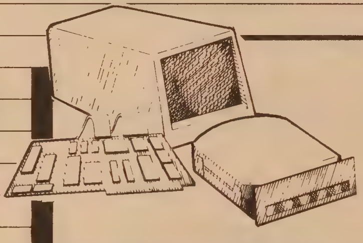

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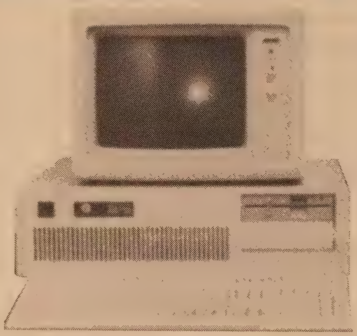

MPC 286

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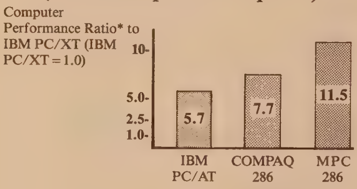

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- 10 MHz 80286 system unit with zero wait state operation, runs popular IBM-compatible software 50% faster than the 8 MHz IBM PC AT for true productivity improvements, even for the most demanding user.
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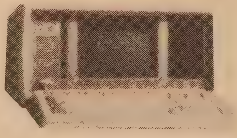
- Compatible with wide variety of operating systems, such as PC-DOS, MS-DOS, XENIX, UNIX, Multilink advanced, and other version of Concurrent Dos.
- Compatible with available multitasking and task switching software packages, including Microsoft Windows, Deskview and Topview.



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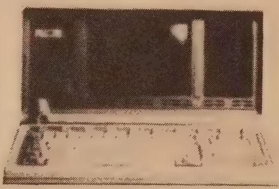

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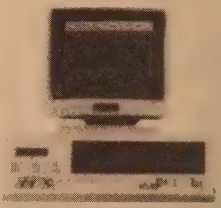

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EA's Amiga Releases

Electronic Arts introduced two new entertainment software offerings. The first is *Return To Atlantis*, a novel-size graphic adventure that sends players on secret underwater missions around the world in search of the legendary city of Atlantis. ($49.95)

The second offering is *Earl Weaver Baseball*, a powerful action and strategy baseball simulation co-authored by baseball's most winning manager, Earl Weaver. On the game's most fundamental level, the arcade play is a sophisticated simulation which features high-resolution graphics and realistic sound to produce the sense of an actual baseball game. On the strategic level, players can step into the manager's shoes as Player-manager or Manager to set line-ups, trade and draft players, yank pitchers and outwit a variety of opponents—even the wily Mr. Weaver himself. ($49.95)

Tracker

Firebird Licensees, Inc. (201/920-7527) has a new recreational software product for the Commodore 64/128 that involves artificial intelligence (AI). *Tracker* combines AI with a huge playfield, high-speed action and graphics to move tactical warfare on microcomputers into a new dimension. Actions involve player control of eight Skimmer craft with the objective of wiping out the renegade Cycloids. You must maneuver quickly through 3-D battle sequences while the program uses AI to increase the difficulty level. In this manner, the Cycloids try to match your tactics, as well as remembering them.

Amiga Releases From Gamestar

Gamestar (415/960-0410) has introduced two new releases for the Commodore Amiga computer. The first is *Championship Golf: The Great Courses of the World—Volume One: Pebble Beach*. This program authentically recreates the layout of this world-renowned course and uses enhanced graphics to accurately depict the placement of sand traps, fairways, roughs and trees. To enhance play, the player can view all 18 holes of the course from multiple perspectives, and can control club selection, stance and type of swing for each shot, and much more. ($54.95)

The second offering is the Amiga version of *The Music Studio*, which provides "Interchange File Format" (IFF) compatibility. With this version, song files created on other music composition programs such as *Instant Music* can be loaded into *The Music Studio* for editing and enhancement; in addition, *The Music Studio* compositions can be downloaded to other IFF programs that utilize music, such as *Deluxe Video*. This is a very comprehensive music composition program for home use. ($59.95)

IBM AND COMPATIBLES

Windows Device Drivers

Microsoft Corp. (Redmond, WA) has shipped the first volume of the Microsoft *Windows* device driver. The package includes support for printing devices such as AMT Color InkJet, Hewlett-Packard ColorPro, IBM 3812 Pageprinter and the IBM Color Jetprinter; pointing devices such as FTG Data Systems Lightpen and Maynard Electronics Mouse; and graphics devices such as Conographics ConoVision 1440, Miniterm Viking I, Wyse WY-700 High Resolution Display Adapter, and Video 7 Vega Deluxe with NEC Enhanced Color Display.

Dragnet

Access Softek (415/654-0116) has made available *Dragnet*, a program that finds information about a common theme or topic scattered through many files and collects that data into a single summary file. The program can read documents from any application in any format, including spreadsheet and database files. ($145)

Borland's Turbo C

Borland International (408/438-8400) is offering aid to those programmers with serious software development projects as well as novices taking their first attempt at the C programming language. The new language development system compiles 7000 lines of code per minute. *Turbo C* provides a one-pass compiler, full control of memory models and extensive code optimizations. *Turbo C* is a high level language tool that delivers programming control at the low end as well.

Championship Baseball

Gamestar (415/960-0410) will release *Championship Baseball* for IBM micros and compatibles shortly. This is an exciting baseball simulation that makes the player the team manager and player for an entire season of big league action. You select each member of your team and put them in competition against the computer or a friend. You can have your team play exhibition games to give them as much practice as you want. When your team is ready to play, this game invites you to enter the 24-team, four-division race for the pennant. ($39.95)

Red Pencil

Capsule Codeworks (206/235-7099) has announced a new low price of $199 for its markup and correction software, *Red Pencil*. The program now also includes operation with keyboard only (the mouse is no longer required), "find" command to search manuscript text, block stet oper-

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ation for removing multiple marks, multiple file batch processing, and conversion between single-spaced and double-spaced files. The program is an interactive software package for markup and automatic correction of electronic manuscripts and documents, and allows users to make standard editing marks on a manuscript displayed on the computer screen.

Sound Presentations

Communication Dynamics, Inc. (503/684-5151), has released version 1.11 of its presentation graphics software for the IBM PC and compatibles called Sound Presentations. Sound Presentations enables users of *Lotus 1-2-3*, *Symphony*, and Software Publishing's *Harvard Presentation Graphics* to put multiple charts on a page, edit color, pattern and size, and enhance charts with company logos, additional text, user-created graphics or clip art. High-quality slides are possible to create using Sound Presentation's link to the MAGICorp Slide Service.

Printility 5.5

Metro Software, Inc. (602/299-7313) has released *Printility*, Version 5.5. This offering is a RAM-resident software package that allows users to merge text and graphics, print standard ASCII files with imbedded printer commands, and emulate a variety of printers. Everything is managed through easy-to-use menus. New features include downloadable character fonts and support for EGA. ($179)

Labels Unlimited

Channelmark Corp. (415/345-5900) has introduced a new program that enables users to create professional-appearing labels specifying size, type heights and contents. *Labels Unlimited* is ideal for a variety of labeling needs, from name tags to video cassette labels to binder covers. ($59.95)

Multiplan 3.0

Microsoft Corp. (206/882-8080) is shipping Microsoft *Multiplan Version 3.0*. This new version has built-in support for multiple users in a networked environment, including file locking, password protection and data encryption, and the ability to link and consolidate different worksheets over the network. Version 3.0 is twice as fast as Version 2.0; it features built-in spreadsheet auditing, "record as you type" macro creation, and allows up to eight different spreadsheets to be displayed on screen simultaneously. ($195).

Pro*Path*Plus

SoftCorp. (813/799-3984) has released *Pro*Path*Plus*, a new Critical Path Method project management system with the ability to read and write *1-2-3* and *dBASE III* files directly. Scheduled for shipment in March, *Pro*Path*Plus* also features statistical planning functions permitting risk analysis and sophisticated resource management with leveling. ($495)

EGA Wonder Board

ATI Technologies, Inc. (Markham, Ontario, CANADA) is now shipping the EGA Wonder board, with drivers to allow Lotus spreadsheets to be displayed in 132 by 44 columns on TTL monochrome monitors. There is also a new screen saver program included with the board's utility programs.

Instant-C 2.2

Rational Systems, Inc. (617/653-6194) has released Instant-C 2.2, a new version of the company's new C-language incremental compiler. With this offering, users can edit an entire memory file with the **#edm** command, which enables them to re-arrange their source code files or conduct global searches without leaving *Instant-C*. Also, with a **#view** pop-up window, users can see the declarations of globals defined in other files while editing. ($199)

Vantex Word 2.0

Vantex Data Systems (201/635-5686) has introduced Version 2.0 of *Vantex Word*. This word processor for IBM micros and compatibles operates quickly and features a built-in 90,000 word spelling checker, split-screen capability, macros and unlimited document size. Other features include 30 user-settable defaults, such as automatic backup and timed save, eight sorted directory-list formats and "magic diamond" cursor movement. There's also a new manual and step-by-step tutorials. ($119.99)

Utility II Release 6

Worthington Data Solutions (408/458-9938) has delivered *Utility II Release 6* with many new capabilities, highlighted by extensive use of color printing of large text—readable at up to 50 feet. The color is selectable by each field on the label. Other improvements available include support for up to 40 fields per label, user selectable bar code density, and optional centering of fields and large graphics text characters. Thirteen sizes of text and ten bar codes are available to accommodate any label design. ($279)

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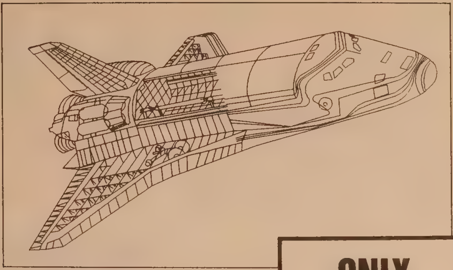

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MACINTOSH

Multi-User Appointment Diary

Imagine Software (415/453-3944) has announced *Multi-User Appointment Diary With Smart Alarms*, a networking version of its popular desk accessory package for the Mac. Supporting the ACF, this scheduling and reminder system lets everyone on an AppleTalk network write to, and/or view, the schedule for up to 21 people in the office, as well as set personalized onscreen reminders. ($149.95 plus $10 per node)

MORE 1.1

Living Videotext (415/964-6300) has announced version 1.1 of *MORE*, the integrated idea processor/presenter program for the Macintosh. *MORE* 1.1 will be mailed free of charge to all registered *MORE* users and to distributors and dealers. Features of the new version include an undo command, selective text styling, multi-level bullet charting, keyboard control, and an outline database disk based on General Information's National Directory of Addresses and Telephone Numbers. ($295)

Your Income Tax

Simon & Schuster Software (212/ 373-8882) offers J. K. Lasser's *Your Income Tax* computer software which should help reduce the time involved in preparing your taxes. The software speeds and simplifies tax preparation, as you don't waste time searching through complex IRS documentation. The information needed to complete your taxes is at your fingertips. By asking specific yes/no questions, the program determines which forms and schedules apply to your individual tax situation.

Prototyper

SmethersBarnes (503/245-7270) has announced *Prototyper*, a technologically advanced professional tool for quickly and easily creating prototyped applications, functional demonstrations, and user interface designs. Any type of application can be generated by *Prototyper* with the look, feel and response of authentic Mac applications. No technical background or programming is required to use its icon based system. The program has a built-in, step-by-step process that enables the user to access all of the features of the Macintosh.

NETWORKING/ COMMUNICATIONS

Network SmarTerm

Persoft, Inc. (608/273-6000) has announced new verisons of two of its *SmarTerm* terminal emulation software packages. Users of these new versions who purchase an optional network kit can now communicate with host computers through either the Ungermann-Bass Net/One or Bridge Communications EtherTerm network systems. Both terminal emulation packages allow IBM micros or compatibles to communicate with larger mainframe or mini hosts. The new version, *SmarTerm 220*, sells for $195, *SmarTerm 400 version 3.2* for $149.

HARDWARE/ PERIPHERALS

Signalman Secure Modem

Anchor Automation has introduced the Signalman Secure 24, an intelligent 2400/1200 baud modem for applications requiring telecommunications security protection. The Signalman Secure 24 operates with up to three levels of password protection: password, callback, and secondary password. The modem can store an average of 64 passwords and callback number combinations, and has a user secure interface via the RS232C port. The modem comes with a five year limited warranty.

ConoDesk 300

Conographic Corp. (714/474-1188) has announced development of the ConoDesk 300, a TMS34010-based product line for the IBM AT and the Compaq 386. The ConoDesk 300 series is built around custom silicon and 34010 implementations of the Conographic curve technology and font compiler. The ConoDesk products integrate Conographic technology into color graphics adapters, laser RIPs, scanner interfaces, and video capture capability. The Conographic font compiler includes interpreters for PostScript, Interpress and DDL, printer emulators for HP LaserJets, Xerox 4045 and IBM 3812, and drivers for Microsoft Windows and HALO.

Mac Scanners

Datacopy (415/965-7900) has initiated shipment of two scanning systems for the Mac Plus. The company's JetReader page feed scanner and Model 730 flatbed scanner can now be used by most of the popular Macintosh desktop publishing programs. The accompanying software has been named *MacImage*. The JetReader sells for $1,300, and the Model 730 flatbed scanner is $1,800. The MacImage Kit is available at $695.

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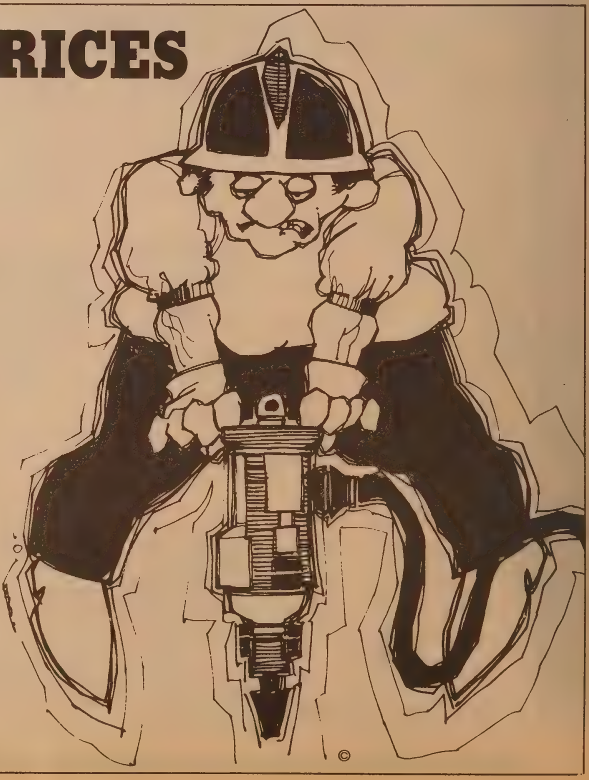

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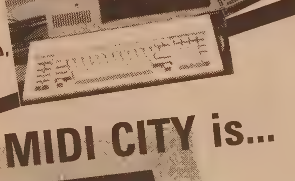

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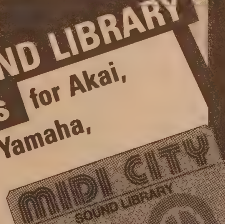

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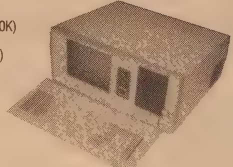

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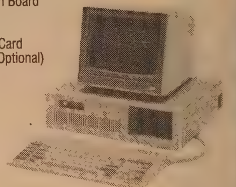
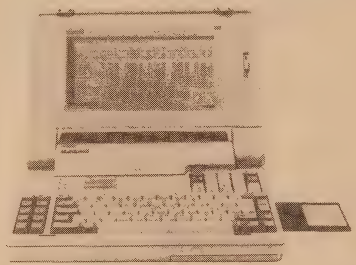


LAPTOP SPECIALS



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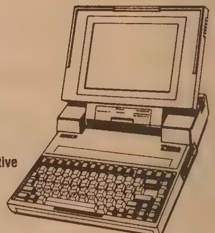

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Hitachi Industrial Division (800/421-1040) is marketing a third CD-ROM drive, a stand-alone version of its built-in model. Like Hitachi's other two models, the CDR-2500S ($1,100) is equipped with cable and interface board to connect to IBM micros. The CDR-2500S uses Hitachi's opto-electronics technology and precision engineering to produce units of recognized reliability (MTBF, 10,000 hours) and dependability. The unit offers 552 MB memory capacity, and a speed of 200 to 535 rpm (CLV) for single-sided disks. With high speed random access, the models have a capacity of more than 1,500 floppy disks.

Hitachi (213/774-5151) has also introduced three high-resolution monitors. The CM-2088A is the world's first 5 million-pixel color CRT, a 19 vertical inch model with 2,730 by 2,048 resolution, 128 KHz horizontal frequency and a 60 Hz non-interlaced vertical frequency. The monitor has a 240 MHz wide-band video amplifier and a 128 KHz high-speed horizontal circuit. The CM-2087A color display offers a flicker-free picture with 77.88 KHz horizontal frequency and 60 Hz non-interlaced vertical frequency. Resolution is 1,664 lines by 1,248 lines. The CM-1588A also offers a flicker-free picture with 49.7 KHz horizontal frequency and 60 Hz non-interlaced vertical frequency with 1,024 by 864 resolution and an 80 MHz wide-band video amplifier.

Smart Image-60

Sysgen Inc. (415/490-6770) has introduced Smart Image-60, featuring the highest storage capacity available in a cassette tape system—60 MB—for XT and AT users. The IMAGE-60 can store 50 to 200 percent more than competing systems at the lowest cost per MB offered today. The hardware also features dual read/write heads for "one-pass" data verification, a dedicated high-speed controller, and Sysgen's proprietary automatic backup "SMART" software with a versatile selection of backup options. ($895)

PUBLICATIONS

Works On The Mac

Microsoft Press (206/882-8080) has published *Microsoft Works On The Apple Macintosh*, a complete guide using the Microsoft Works word processing, spreadsheet, database management and communications capabilities to set up and manage a small business and handle personal tasks as well. Author Charles Rubin offers a general description of each of the program's four modules, and explains how each module is used. ($18.95)

New For Macintosh

Adobe Illustrator and Type Library

Adobe Systems Inc. (1870 Embarcadero Rd., Palo Alto, CA 94303, 415/852-0271) has introduced *Adobe Illustrator*, an art production tool for producing high quality line art and illustrations. The *Adobe Illustrator* is based on PostScript and uses precise curves and lines to describe drawings. The user can create new illustrations or "trace" existing artwork, add captions, then modify the artwork in an endless number of ways. The final product is professional quality line art and illustrations that can be used on their own or placed into other documents and printed on any PostScript printer. ($495)

The company has also announced the availability of additional downloadable fonts from the Adobe Type Library. The typeface families now available with this new release include Century Old Style in two weights with italic, ITC Franklin Gothic in three weights with italic, ITC Cheltenham in two weights with italic, Park Avenue, Bodoni in three weights with italic, Letter gothic in two weights with italic, Prestige Elite in two weights with italic and Orator in one weight with italic.

FONTastic Plus

Altsys Corp. (720 Avenue F, Ste. 108, Plano, TX 75074, 214/424-4888) has unveiled *FONTastic Plus* for the Mac. This program improves the appearance of screen fonts and ImageWriter produced documents by making many of the professional typographic and logo-design capabilities of their Fontographer version 2 available to ImageWriter users. The program introduces such features as kerning, fractional character spacing, scanned-in logos, keyboard-assignable special characters and logos, and large type faces to the ImageWriter for the first time. The program will be available February 1, 1987. ($79.95)

MacSMARTS

Cognition Technology (55 Wheeler St., Cambridge, MA 02138, 617/492-0246) has introduced *MacSMARTS*, an artificial intelligence program that allows users to diagram their ideas and clarify their decision making. The program's features include a spreadsheet-like interface that uses "fill-in-the-blank" forms

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MacC Jr.

Consulair Corp. (140 Campo Dr., Portola Valley, CA, 94025, 415/851-3272) has introduced *MacC Jr.*, an introductory C language development system that offers everyone who wants to learn to program on the Mac a chance to develop real applications. The program comes complete with ten example programs and is a complete Kernighan and Ritchie implemention of C including the fastest IEEE/Apple SANE 80 bit floating point, 32 bit integers, 7 register variables, an extensive standard C and Macintosh support library, Pascal function calls for easy interface to ROM, and enhanced symbolic debugging capability. ($79.95)

FullWrite Professional

Ann Arbor Softworks, Inc. (2393 Teller Rd., Ste. 106, Newbury Park, CA 91320, 805/375-1467) has debuted *FullWrite*, an advanced third generation word processor for the Macintosh. *FullWrite* combines power word processing and desktop publishing capabilities in a completely WYSIWYG environment, and also includes built-in *MacDraw*-like capabilities. The program's features include: footnotes, endnotes, table of contents and index generation, spelling checking, hyphenation, outlining, style sheets, multiple documents, and a browser. The program is scheduled for release in the second quarter of 1987.

The SpeedDisk System

MicroSPARC Inc. (45 Winthrop St., Concord, MA 01742, 617/371-1660) has introduced *The SpeedDisk System*, which creates simulated disk drives in Mac memory called SpeedDisks. SpeedDisks operate just like normal floppy disks, except that programs stored on them run up to ten times faster. The SpeedDisk system lets the user "supercharge" application programs. Using four easy steps, an application program can be configured on a SpeedDisk and saved. A special SpeedDisk icon appears that can be saved to a floppy or a hard disk. Thereafter, a double-click of the mouse opens the applications, which run at top speed. ($29.95)

McMax

Nantucket Corp. (12555 Jefferson Blvd., Ste. 300, Los Angeles, CA 90066) has announced *McMax*, a relational database management system for the Mac. This offering is fully *dBASE* compatible and includes a programming language which allows users to develop applications in either *McMax* or *dBASE* and run them interchangeably on either a Mac or PC without rewriting. *McMax* can create databases, manipulate structured data from multiple files and produce customized reports. The system handles database files up to 63 MB and files up to 16 million records. Each database file can have seven active index files and as many as 100 index expressions. Ten separate database files can be open simultaneously for merging of data from different files. ($295)

SuperLaserSpool

SuperMac Software (PO Box 390725, Mountain View, CA 94039, 415/964-9694) has introduced *SuperLaserSpool*, a LaserWriter print spooling utility. When printing an *Excel* spreadsheet, the product returns control of the Mac to the user in ten seconds. The offering achieves its speed through an intelligent background processing program that manages the entire printing process, which means the conversation between the Mac and the LaserWriter takes place invisibly instead of while the user waits. ($149.95 single user, $395 for multi-user version)

New Excel Templates

Heizer Software (5120 Coral Ct., Concord, CA 94521, 415/827-9013) has released four collections of templates that are compatible with Microsoft *Excel*. The templates include: Introductory Tutorials, Advanced Tutorials, Utilities and Personal Resources. Each set has at least ten programs geared to specific areas of *Excel* owners' needs. ($50 for each collection)

Multi-User Appointment Diary

Imagine Software (19 Bolinas Rd., Fairfax, CA 94930, 415/453-3944) has released *Multi-User Appointment Diary* with *Smart Alarms*, a networking version of the *Smart Alarms* desk accessory for the Mac. This scheduling and reminder system allows everyone on an AppleTalk network to write to, and/or view, the schedule for anyone else in the office, as well as a set of personalized screen reminders. Up to 22 users can be listed on the menu at one time, and additional groups of 22 can be added to any other available volume. ($149.95 plus $10 per node)

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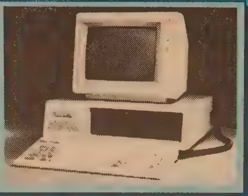

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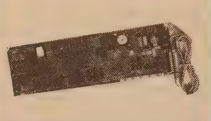

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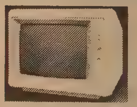

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A continuing fictional story

CUPERTINO

of the computer industry and the people within it.

By Steve Rosenthal

At first, Oliver DeToll thought the stomach upsets were just one of those bugs going around. And with the hours he'd been keeping at Mutronics, working to get the new flat display ready, maybe he was just tired.

Even when Richard, his 11-year-old, starting complaining of similar pains, he didn't make too much of it—if it was a flu bug, they might be passing it around, and besides, any excuse for Rich not to go to school these days seemed to be a good one. Rich said there were a lot of kids out with the bug.

Still, it didn't seem all that serious, and certainly not worth putting off the trip to Montvale. While DeToll, like most of his compatriots at small computer development firms across the country had feared as well as admired the computer giant for many years, he found that he was actually enjoying those trips to see their liaison people.

From his point of view, the project certainly seemed to be going well. Since signing on as an IBM developer, they were getting regular salaries, they could buy supplies, and they were learning quite a bit about engineering a product for high-volume production. Even the fabled IBM security team had been surprisingly reasonable—of course, they had tightened up some of the procedures at Mutronics, but it was more like working with easily-misplaced valuables than living in a maximum security prison.

Bringing home a more regular paycheck had also improved things with Betty. Or maybe it was the shorter hours and lessened tension at work. But in any case, they seemed to be getting along much more smoothly in recent weeks.

He thought about all that as he moved from room to room, gathering up what he needed for the trip and packing it into the garment bag-style carry-on. The airlines, he knew, had practically abandoned checking compliance with either weight or size limits for this type of baggage, so if you could stuff it in and carry it on, you didn't have to worry.

His plane left at one, and with Rich home sick, he figured he'd stay home and pack and go directly to the airport, instead of going to the office first. If Rich didn't seem better by noon, he'd call Betty, and she'd come home early. They figured Rich would be okay for a few hours in the afternoon.

But, DeToll noticed, his son didn't look at all like he was getting better. In fact, he seemed noticeably weaker, almost listless. But wasn't this normal for the flu? He'd spent so little time with Rich in the past two years, he didn't even know.

"Rich, how're you feeling?" DeToll asked, trying to keep any worry out of his voice.

". . . uh, dizzy, just dizzy, and it hurts, Dad . . ."

"That's okay, son, it'll get better soon. It's just a bug."

"You're not going to go, are you, Dad?"

"Well, I don't know . . . we'll see how you feel. I'll call your mother and see whether she can come back early."

"It hurts a lot," Rich repeated, curling up on his side as if his stomach was pulling him into a knot. He was beginning to whimper softly.

"Rich, Rich," DeToll said softly, stroking his son's forehead. Then, suddenly, he shook his head sharply, and turned back to the bed. "We're going to take you to the doctor. . .I'm not going away after all."

* * *

"It's definitely not flu, Mr. DeToll," the doctor was saying. He was sitting in her office in the pediatrics wing of the Kaiser clinic in Redwood City. "You say you've been having some of the same symptoms?"

"Yes, and Rich says there've been a bunch of his friends out sick this week." DeToll realized he hadn't paid a lot of attention to his son's chatter about schoolmates, so he didn't have any further details.

"He doesn't seem to be getting any worse, and I don't think he's in any immediate danger, but we'd like to do some tests. Maybe keep him here overnight."

"So you think it's serious, then. . ." DeToll tried to read some emotion under the pediatrician's smoothly professional demeanor.

"Now, Mr. DeToll, we're just being cautious." She looked down and wrote some notes into the charts spread open on her desk. "One other possibility that this pattern might fit is some sort of environmental contamination. You work in electronics, Mr. DeToll?"

"Yes, up in Mountain View."

"You work with any chemicals, solvents, exotic materials?"

"A little, but mostly I'm up front in the office. And Rich hasn't been there for weeks." Hurriedly, he tried to check through his memory, making sure that was right. Everyone in the valley was suddenly becoming concerned with toxics—jeez, he hadn't poisoned his own kid, had he?

"How about your wife?" Dr. Malik continued, glancing again at the chart. "Still with the library?"

"Yes . . . I don't think she handles anything strange."

"Has your house been sprayed for termites recently?"

"We rent, but not in the three years we've been there."

"On city water ?"

"Water district . . ."

"Mr. DeToll, if the tests come out the way I think they might, I'd like to send a health investigator by your house, and maybe over to your workplace to take a quick look around. You have any problem with that?"

"No, no, of course not," he answered quickly. Then he realized he probably did have a problem after all.

"Dr. Malik, of course I'll do whatever I need to do for Rich, but I'm sure you realize that because the computer industry is so competitive, we also have some trade secrets to protect. I may have to do some negotiating at work. When would they be coming by?"

"I don't want to alarm you about your son, Mr. DeToll, but if I can get somebody I was thinking perhaps this afternoon. Health investigators are used to keeping secrets, but if they're going to do a good job they'll have to be able to look around fairly thoroughly."

"Sure. . .I guess if that's best. . .Is there a phone I can use?"

"Over at the nurses' station."

"Let me duck in to see Rich for a moment, then I'll make the arrangements."

* * *

"Jim, it's Oliver DeToll. I've got a slight problem out here. . ."

"Oh? Nothing serious, I hope. . ."

"Probably not, but I'm not going to be able to make it tomorrow for that meeting we had set up. Can we postpone it a few days?"

"What's the problem?"

"Nothing with the panel, at least not directly. But we've had a couple of cases of stomach upset, and the health department wants to send somebody by to look at the lab." DeToll knew that IBM was considered a progressive, pro-family employer, but he didn't know how understanding they would be if he said he was postponing the meeting principally because his son was ill.

"Uh-oh . . . They're not going to find any problems, are they? Your folks and ours both swear the panels are safe."

"Yeah, the panels are okay. And we're pretty good about lab safety. I figure the worst case is maybe one of the solvent cans in the back isn't capped tightly. The Health Department says the investigator who comes out keeps it all confidential, but I'm supposed to check in with you and Security before we let anyone from outside go through the place."

"Well, we want you to cooperate, of course. But keep it local. There's no reason to involve IBM's name in this. And call me if they find any problem. We want you folks to be careful, now."

"Right. Talk with you later."

(to be continued next month)

Steve Rosenthal is a writer, editor and television producer who spent years preparing to write fiction by driving a cab, hitching coast to coast, falling in and out of love, and lately working in the computer industry.

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Osborne

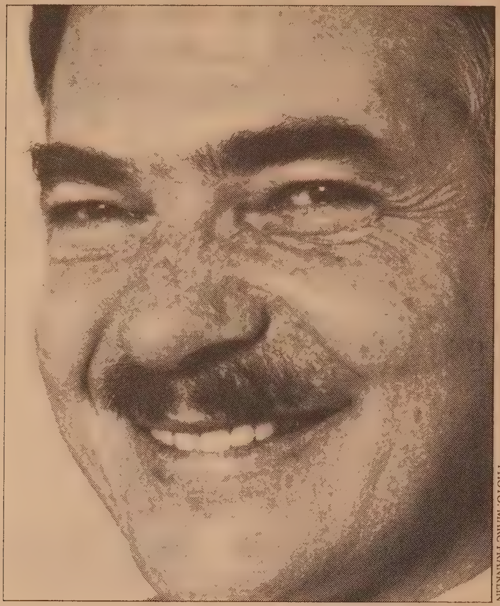

PHOTO: MARC FRANKLIN

On Software

Maverick entrepreneur Adam Osborne holds forth on pricing, copy protection, industry standards, "look and feel," and other crucial issues.

By Mary Eisenhart

"While imitation is the sincerest form of flattery, in this case, it happens to be the sincerest form of theft as well."
—Jim Manzi, President and CEO, Lotus Development

"Suing your competition is generally the last resort of a company that is rapidly losing its lead in the marketplace."
—Adam Osborne, President and CEO, Paperback Software

No stranger to controversy, Adam Osborne currently finds himself, or rather his company, Paperback Software International, embroiled in a landmark legal dispute with Lotus Development Corporation. The issue—whether PSI's *VP-Planner*, a *Lotus 1-2-3* compatible spreadsheet package, and *The Twin*, another *1-2-3* lookalike from Massachusetts-based Mosaic Software, unfairly copy the "look and feel" of *1-2-3*, the best-selling spreadsheet package in the PC world.

Osborne, who had previously founded Osborne Associates (later Osborne/McGraw-Hill) and Osborne Computer, started PSI in late 1983. Paperback Software's initial releases were low-cost ($19.95-$69.95), fairly generic applications which sold decently but unspectacularly; its emergence as a serious contender in the software marketplace dates from the mid-1985 release of *VP-Planner*. Now in Release 1.34, *VP-Planner* adds database capabilities to its Lotus-compatible interface, retails for $99.95 list compared to *1-2-3*'s $495, and has been chosen over *1-2-3* in some important corporate and government sites.

On January 12, Lotus filed suit against PSI and Mosaic in US District Court in Boston, charging copyright infringement, false advertising and unfair trade practices, and seeking $10 million damages from each company. At the same time, Lotus sought an injunction prohibiting sale of both *VP-Planner* and *The Twin*.

While nobody knows exactly what prompted Lotus to bring suit after *VP-Planner* had been on the market

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for 18 months (or why PSI and Mosaic were chosen from a host of Lotus-workalike publishers), most observers agree that the decision was at least partly motivated by two recent court cases. The US Supreme Court declined last year to hear an appeal in the case of Whelan Associates Inc. vs. Jaslow Dental Laboratory Inc., thereby letting stand a lower court decision that Jaslow's PC-based dental management system was indeed a copy of Whelan's mainframe-based program. The lower court had held that the structure and organization of software are protected by copyright.

Further, in a closely-watched case in San Francisco, the US District Court decided last fall that Unison World of Berkeley improperly copied the menu screens, input formats and sequence of screens in Brøderbund Software's *Print Shop* in its *Print Master* product. In his decision, Judge William H. Orrick maintained that the "look and feel" of a software product was covered by its copyright—a doctrine that's been hotly debated by software publishers and industry analysts ever since.

PSI and Mosaic have joined forces to fight the Lotus suit (one oft-expressed theory is that industry-leader Lotus has far better resources to sustain the ravages of a protracted legal battle, regardless of eventual outcome). Meanwhile Osborne maintains that *VP-Planner* simply builds on the Lotus standard and creates an improved product, much as Lotus itself improved on earlier products, and that adherence to an industry standard such as that defined by Lotus is not only necessary to sell software, it's what has made rapid progress in the microcomputer industry possible. A master of drama and rhetoric who chooses his words carefully but rarely minces them, he issues ringing statements of determination to fight and triumph—e.g. "Lotus has decided to put their efforts into litigation instead of product development. We do not feel that any of their claims are valid, and we intend to vigorously protect our right to offer innovative new products that conform to widely accepted business standards. Their goal is to eliminate the alternatives to their products. Our goal is to improve on features, price and performance. *VP-Planner* is a better product at a better price, and we are glad that Lotus has given us this opportunity to prove it in court."

In PSI's Berkeley headquarters, Osborne discussed the company's history and plans, its formula for success, and the implications of the Lotus case.

What led you to start Paperback Software?
My idea was that software prices were going to come down, along with hardware prices. They *had* to come down.

There were two ways in which I could bring prices down. The first one was by *not* developing software in-house, but by getting software from outside authors who'd developed it using sweat equity. And the other was by manufacturing products with lower cost of goods, not sticking them in linen boxes with three-ring binders and stuff like that. There's no other industry I know of, outside of women's perfume, that goes out of its way to increase the cost of goods on the product. Software can hardly be classified in that category. What has to work is what costs the least. So that's what I did.

That part of it was fine. Initially I was also of the opinion that we would do well with PFS-type software, which is to say that most people I knew had never used more than 10% of *WordStar*. So give them a product which gives them everything they routinely use, charge less for it, and they'll love you for it because the interface is so much easier.

That proved to be wrong. In fact, interestingly enough, in the marketplace today, the products that sell well have to be feature-laden. People will always go for the option that does a hundred things that they'll never use, as compared to the one that's much easier for them to learn and use.

Why?
I don't know. But it's the way it is. Our early products, such as *Paperback Writer* and *Number Works*, would satisfy the needs of between 50 and 70% of the marketplace, but weren't that successful. Software Publishing [publishers of the PFS series] found out the same thing for themselves shortly thereafter, and had a disastrous time of it for awhile.

The products that proved very successful were the VP series. I was really looking at two lines of products —a high-end line and the low-end line. The high-end line took off right away.

VP-Planner was the first of the high-end line. I seriously doubt that there's more than a handful of people in the country that really can use all of the capabilities of *VP-Planner*. I mean, it's way beyond *Lotus 1-2-3* in terms of its capabilities. It is to *Lotus 1-2-3* as *Lotus* was to *VisiCalc*, yet it is selling like hot cakes.

What kind of features do you look for in a product?
When we design a product we look for greater functionality and ease of use as compared to what's already on the market. A lower price on its own is not enough. To come up with a product that is as good, or almost as good, but a lot cheaper, doesn't work, as we found out early on. You've got to offer a package that does things other people can't do, or does the things other people can do, but easier, *and* be cheaper, you see.

In the market the VP series is aimed at, is ease of use a crucial factor?
Oh yes. Ease of use is a crucial factor, and that comes in two ways. One, by conforming to standards that people already know and understand, and two, by being intuitive, not having three steps where one would do.

If you are dealing with a *Lotus* user, or someone who is trained in *Lotus*, you really have no choice but to conform to that instruction sequence which has evolved into *Lotus*, the *VisiCalc* instruction sequence. You really have no choice, because the costs of retraining would be horrendous.

This industry has always gone to standards. Where would we be today if we didn't have the IBM PC standard? We'd have dozens and dozens of different and completely incompatible computers, and the software industry wouldn't have gotten off the ground, because anything we did we'd have to replicate ten times. It just doesn't work that way.

Do you have a pre-existing idea of what kind of software you're looking for and then go shopping for it?
In some cases yes, in some no. *VP-Planner* was brought to us, and we looked at it and said, wow, this is one heck of a product. *VP-Info* [a relational database package] was brought to us. With *VP-Expert* [a $99.95 expert systems package], I had said this is what I want, find it.

Who is likely to use a package like VP-Expert?
Expert systems, initially, were very high priced, which meant that people only used them where nothing else would do. If you had to pay $5000 for an expert system or $500 for a database, you'd use the database.

In fact, expert systems will do most of what a database program will do, in addition to having this kind of logic and things. Our price is so low that the expert system will appeal to anyone who's putting together dialogue kinds of query programs for use by anyone else within a company. If you want someone to go down a checklist of items, to make sure the new employee being hired conforms to all the state, federal and company regulations, or you go through the rooms of an office and make sure each one conforms to all fire codes—checklists, questions and answers, things of that kind, are much easier to generate using an expert system than anything else. Any kind of program that involves dialogue with the user.

The advantage of an expert system is that with a database, it's much more difficult to do. With a spreadsheet it's almost impossible. If you present the user with a dumb form which they fill up, and if, based on what they entered on question two, they should be doing something totally different, that's very difficult to program in a spreadsheet. It can be done in a database, but it's not that easy. In an expert system it's a snap, because that's what it's set up for.

How are you managing to sell it for such a low price?

"This industry has always gone to standards. Where would we be today if we didn't have the IBM PC standard? We'd have dozens and dozens of different and completely incompatible computers, and the software industry wouldn't have gotten off the ground."

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"Lotus themselves, when they came out with 1-2-3, understood that the market out there belonged to VisiCalc, and if you told people they had to learn anything from scratch again, they weren't going to be very happy with you. We saw absolutely no indication that there was anything wrong with taking the path of VisiCalc to 1-2-3 and extending it further."

For the most part, the Artificial Intelligence community have perpetrated one of the greatest hoaxes on the industry that I've ever seen, in view of the fact that AI type programs are actually relatively trivial pieces of software compared to a lot of the other things that are being sold. *VP-Planner* is a *far* more complicated program than *VP-Expert* or any of the expert systems that I've seen yet.

Now *VP-Expert* goes a step beyond most of the others in that it is totally integrated with a database and spreadsheet. You can manipulate spreadsheet programs—*1-2-3* or *VP-Planner*, or *dBASE* or *VP-Info*—using *VP-Expert*, which can then become an intelligent front end to any of those applications. Even with that, it is still a much simpler program than either *VP-Planner* or *VP-Info* in terms of the amount of code in it. It's a relatively powerful expert system when stacked up against the one or two $5000 expert systems currently being sold on the market.

So what is your pricing structure based on?

Cost of goods. And any company that can make 60 to 65% gross margin is in good shape.

If you're doing so well selling low-cost software, why is Lotus still charging hundreds of dollars for its product?

First of all because it *can*. Because people are dumb enough to pay the price.

And second of all because they're now burdened with overheads that we wouldn't *dream* of getting. I mean, they've got programmers coming out of their ears. They do a lot of their programming in-house, to develop products that, frankly, never sell. They finish up buying products from the outside, which they then introduce as their future product—which is neither here nor there, except that those people are *there*. They've got 800 or 1000 people on the *payroll* at Lotus.

How many do you have?

Thirty-five. It's a bit of a difference.

When you develop your software in-house you burden yourself with a *horrendous* expense, because whatever those programmers do, you pay. Now the best programmers won't work for another company. They're all free-spirited people, they're not the kind that want to go in and work 9 to 5, or midday to midnight or whatever the time may be, for a paycheck, when the alternative is that they could go work for themselves, come up with something that makes money, and from that point on they continue to develop the product and keep going.

We're way ahead of any company that's doing it in-house. We have total control—100% of their revenue comes from us so they do exactly as we tell them. They work at home or among themselves doing what they love to do, which is program; they don't have to market, they don't have to do any of that stuff. They're all happy.

Are they paid on a royalty basis?

Yes. But we pay them a royalty based on cash received, so from a cash flow viewpoint we're in great shape. We don't have to start paying for new products two years in advance of ever getting any money back. And that royalty goes into our cost of goods, so when I say I'm getting 60 or 65% gross margin—which is public record, you can get our financial statements since we're a publicly traded company—that is actually better, a bigger gross margin than a Lotus or an Ashton-Tate would report, because our cost of goods includes the royalty, which in their case is in their R&D budget, which comes after gross margin.

When VP-Planner first came out, how did you perceive it with regard to 1-2-3? Obviously there's some resemblance, or Lotus wouldn't be suing now...

Absolutely. The thing is, Lotus themselves, when they came out with *1-2-3*, understood that the market out there belonged to *VisiCalc*. And if you told people they had to learn anything from scratch again, they weren't going to be very happy with you.

Now with *VisiCalc*, you didn't have macros, you didn't have templates and things like that—those were add-ins to be in *Advanced VisiCalc*, which never saw the light of day. It's not very well known, but in fact the people who designed *1-2-3* were beta testers for *Advanced VisiCalc*, and got a lot of their ideas from it.

Now, at that time, we saw absolutely no indication that there was anything wrong with taking this path of *VisiCalc* to *1-2-3* and extending it further. In the manual we make no attempt to hide the fact that we're keystroke-compatible; you *have* to be, it's an industry standard product. We've had government contracts being let that specify, not *Lotus 1-2-3*, but all the keystrokes of *Lotus*. It's a *requirement* to bid the government contract, you see.

Yes, we made the product keystroke and file and macro compatible, as far as that went, but from there we built. We built all of our database capabilities and additional spreadsheet capabilities, and we came out with a product that's done very well.

What does it do that Lotus doesn't?

I could go on with features and features, but the major thing it does is that it has real access to a database. Spreadsheets tend to get very large and very slow, because the data the spreadsheet uses must sit in the spreadsheet. You may only want one little piece of one operation, but everything has to be there.

Now in our case, we can keep our data either in *dBASE* files or in a multi-dimensional database. And the multi-dimensional database is a device which, one way or another, most people use when they use spreadsheets. For example, any time you do a budget, you're doing time vs. budget entries by department—three dimensions. If you're going to do a revenue forecast you're going to do time vs. account entries by product line and distribution channel—four dimensions. You start putting that into a spreadsheet and before long it goes from here to Timbuktu. You need an AboveBoard and a cup of coffee while it recalculates. In the case of *VP-Planner*, all that stuff sits out in a database on disk. You bring the little bit you need into the spreadsheet that does one job, then you bring in another spreadsheet for the next job. So the 500,000-byte *Lotus* spreadsheet, when you go to *VP-Planner*, it breaks up, and it becomes a big database on disk, which is not in memory. And then—dozens of little spreadsheets, none of which take long to execute, each of which does one job.

VP-Planner is capable of handling dBASE files, but the mutli-dimensional database is contained within the software itself?

That is correct.

Now comes VP-Info which is a freestanding database. How does it relate to VP-Planner?

Well, *VP-Info* files can be read by *VP-Planner*. *VP-Planner* will read *dBASE* or *VP-Info* files. *VP-Info* will read *dBASE* files or its own format. *VP-Info* would look very familiar to a *dBASE* programmer, but it is far more powerful.

First of all, *dBASE III* is not the universal standard in the database that *1-2-3* is in the spreadsheet. Second of all, it's a truly crummy language, whereas *1-2-3* is actually a pretty good spreadsheet. We can think of no good reason why we should try to perpetuate *dBASE III* as something the industry should keep using. Over a period of time they're going to demand a more powerful, versatile, capable language. We realize it's a longer, slower haul, coming in with something that's different, but in the end we know we'll win, because it's a much better language.

How much would a person that was reasonably familiar with dBASE have to re-learn?

A day or two. And a lot of our features they'd love, because we give them one programming statement to do what might take them a page or two of programming in *dBASE*.

What would be the advantages of making the switch?

Much faster program generation. We find that a lot of people who've got *dBASE* and *VP-Info* continue through habit using *dBASE* for major tasks, but if they want to whip anything together quickly, they'll go to *VP*.

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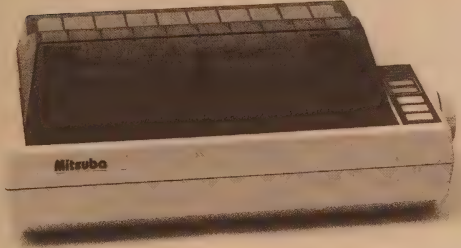

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Do you envision having a full line of business products that talk to each other?
Yes. We've already talked about coming out with a graphics package. We'll have all of the others.

Who are your customers?
At the moment I would say they tend to be smaller companies and individual business people. However, we're making steadily greater inroads into the corporate market. I think we've got a minority of the Fortune 1000—a lot of them are still buying *Lotus*. I think we've got the majority of low-cost clone buyers.

Why are the corporate buyers who are still buying Lotus doing it?
Inertia. It's what they've done in the past.

And there's another problem, you see, in that a lot of them, if they get *VP-Planner*, that's all well and good—*VP-Planner* can run any *Lotus* worksheet, but *Lotus* cannot run any *VP-Planner* worksheet. The thing is, people who get *VP-Planner*, being human beings, are going to start using *VP-Planner's* additional capabilities. The moment they've done that, they have spreadsheets which are incompatible with *Lotus*. At that point, the company needs to go back and clean out all the *Lotus* spreadsheets and replace them with *VP-Planner*, or they have two standards in the company.

They don't like that. And so until they see the overwhelming advantage of *VP-Planner*, a lot of MIS people are reluctant to see it come in at all.

You've had some major sales to government.
Yes, the Department of the Treasury has gone with us rather than *Lotus*.

Did they say what their reasoning was?
They liked our features more, we had a lot more to offer. Our price was better, and we offered them un-copy protected software, which at the time Lotus didn't do for anyone. Now they do for the government, but no one else. NASA buys *VP-Planner* also. They're the two major buyers.

Your ordinary customers, though, don't get non-copy protected software...
That is correct, and it's a legal issue. It's not that we have any problem with them having non-copy protected software; in fact, for $10 they can get a non-copy protected disk. The issue is that the law in every state of the union is very ambiguous regarding boxtop license agreements. No one ever signed that agreement that says if you buy this, you can only use it for whatever reason. They didn't sign that agreement. That is not an enforceable agreement.

It has been determined that it is not enforceable?
It has never been determined to be enforceable. You see someone coming along attempting to change the law on us the way Lotus is trying to do—Lord knows any day some smart lawyer is going to come along and say that that boxtop license agreement is not legal, anyone who bought that software can do anything they like with it. And they may win. So what we do is say, fine, give us a signed license agreement and we'll give you the un-copy protected software. So every book contains a license agreement; sign it and send it to us with $10 and we'll send you the un-copy protected software. That to us is eminently fair; it legally protects us and, for a nominal charge, gives our customers what they want. And we frankly haven't had any complaints about it.

We're not that worried about the day-to-day, run-of-the-mill copying. What we're worried about is all of a sudden some landmark lawsuit coming along and saying that the boxtop license agreement is invalid. If the federal government would come out with a law that said the boxtop license agreement on software was valid, we'd drop copy protection tomorrow. In the meantime, we've been bitten, we're twice shy, so what we would need to do is worry about the legality of the boxtop licensing agreement and find some easy inexpensive way for people to get un-copy protected software while leaving us in good shape with the law.

Your reasoning seems eminently sound, but Bill Gates [of Microsoft] is nobody's fool either, and he dropped his copy protection...
One of these days he may wake up with a nasty shock. We are a new industry. We have new problems. The laws that we're working by were not written with us in mind by people who understood our problems.

The legal climate is pretty ambiguous right now.
Well, you know what I've always said is that in this country lawyers are the sand in the machinery of our industry. The law in this country is, next to the Mafia, the most disastrous part of our society. I have dealt with lawyers and been involved in a certain amount of litigation, particularly around Osborne Computer Corporation, and frankly I think most of them can be classified as gangsters, in terms of their ethics and mental attitudes toward what they're doing. They're amoral people who really care about nothing except playing a game which is of no value to society whatsoever, mostly only of value to lining their own pockets.

But that's what we have to put up with, you see, it's the way it is. They've got it very nicely set up at the moment—for themselves. It is one of the most ruinous, wasteful sections of our society.

What are your feelings about the Brøderbund/Unison case that started all this?
At this point my lawyers have been very explicit that it would not be a good idea for me to comment on the merits of any kind of a lawsuit. I would say this much, though—I have read carefully Judge Orrick's opinion, and based on Judge Orrick's opinion, I feel that we would win, that Judge Orrick's own opinion would find for us against Lotus.

It seems to me that there are some fundamental differences in the two cases.
Absolutely. Because what Judge Orrick was talking about in his opinion was a virtual pixel-by-pixel copying of a Brøderbund product by Unison when there was no good reason for them to copy the Brøderbund product, for marketing or any other purpose. They just did it exactly the same, you see.

But on the strength of that, Lotus has decided to sue you and one other company.
I don't know whether it's on the strength of that, I don't know why. It's a matter of public record that Lotus has sued my company and one other company.

At the time that Lotus filed the lawsuit, my reaction was—I am ecstatic, I'm dancing off the roof, I didn't think that Lotus could be so foolish. And this morning in the *New York Times* Mr. Sanger reports that some senior Lotus executives admit privately that they have been rather amazed by the reaction to the lawsuit. I am not. I think that they were foolish to do it, I am sure that we will prevail, but beyond that there is not much I can do or say about the case.

I *can* say that I am just overwhelmed by the level of support we have been getting from users. The industry is 100% behind us. That's absolutely clear.

What do you see as the case's effects on the industry as a whole?
In terms of effects on the industry—I think it was Dan Bricklin [co-author of *VisiCalc*] who talked about Vonnegut's Ice-Nine [in *Cat's Cradle*, a variant form of ice that froze at room temperature and ultimately produced the end of the world]. I think that comes pretty close to the truth. If Lotus were to prevail, the software industry would go into the Dark Ages of having a few companies monopolizing segments of the software market, and bringing innovation about as fast as AT&T brought in new telephones when they had a monopoly on telephones.

How does this issue relate to the issue of IBM's BIOS on the PC, in which it was unable to prevent the manufacture of clones?
Well, I would say that if Lotus were to prevail, that IBM could use the same argument to protect its BIOS, and it would be the end of...Well, I'm not sure it would be the end of clones, because three years have pas-

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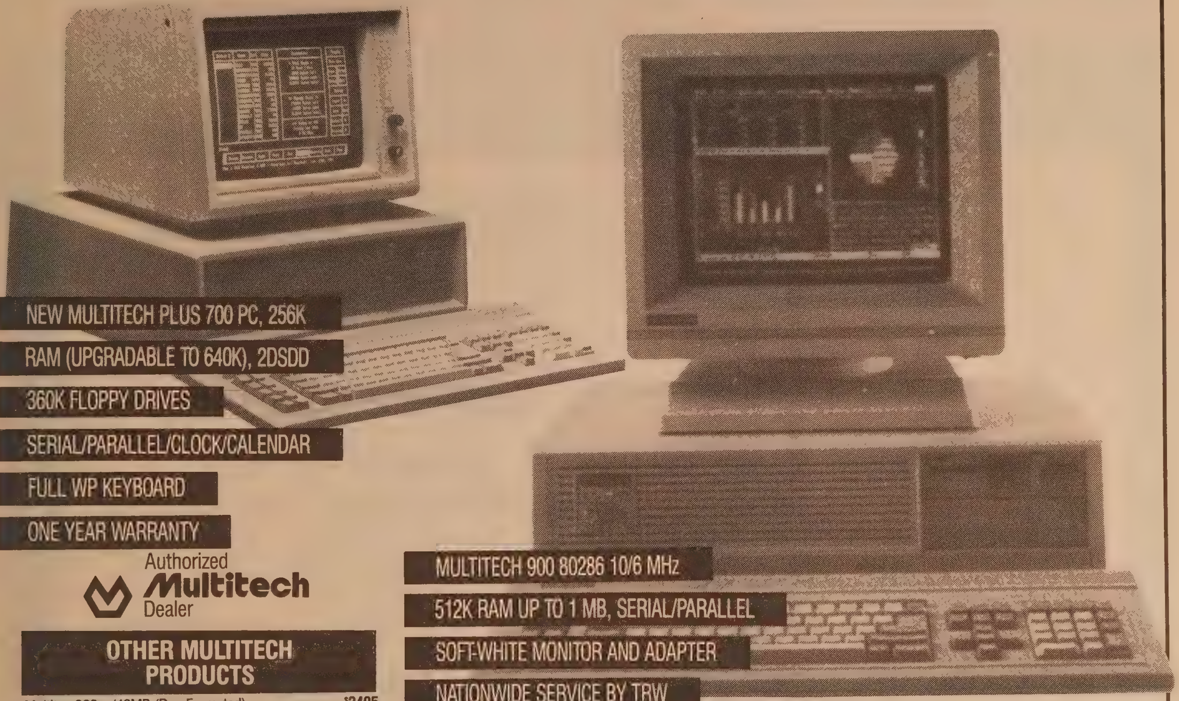

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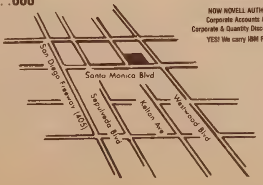

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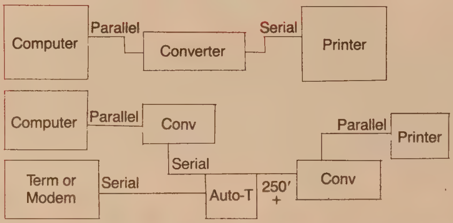
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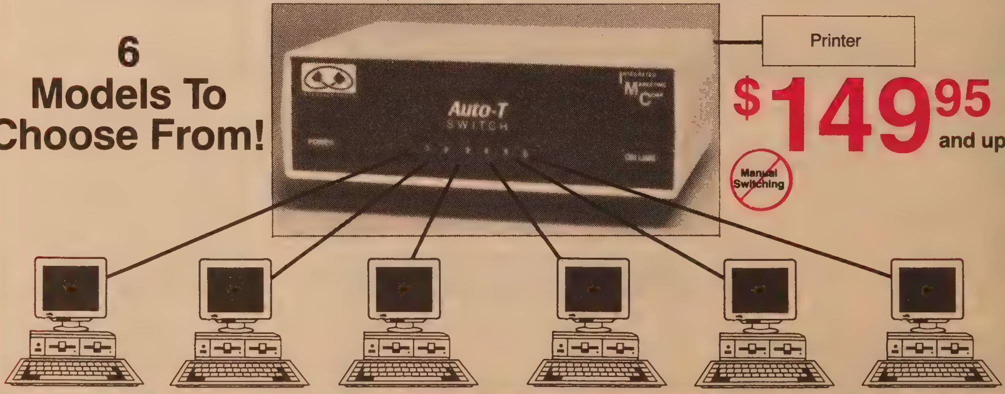
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> ***"If Lotus were to prevail, the software industry would go into the Dark Ages of having a few companies monopolizing segments of the software market, and bringing innovation about as fast as AT&T brought in new telephones when they had a monopoly on telephones."***

sed since the first IBM BIOS got copied, and there's a three-year statute of limitations in this country.

What IBM would likely do, though, is make some changes in the BIOS, copyright the changes, and then attempt to establish a new standard which nobody could clone. Now whether or not they'd get away with it at this point, whether the standard is bigger than the company or not, is anyone's guess. But you could go back and say that had the Lotus argument been enforced back in '81 and '82, there would be no clone business today. There would be no copying of IBM PCs. And we would have no standard.

So having standards is good for the industry.

Absolutely. It's the way the whole industry began. You can go from the very beginning. The first microprocessor, the 8008, copied the instruction set of a minicomputer, the DataPoint 2200. The 8008 gave rise to the 8080A, the 6800, and the 6502, all three of which were enhancements of the 8008. The 8086 and the 8088, plus the 68000, were enhancements in turn of the 8080A or the 6800. The Z-80 was a straight upward enhancement of the 8080A.

When you got microcomputers coming along, the first was from MITS, the Altair. The Imsai was an exact reproduction of the MITS, it was absolutely compatible. It used the same bus. By having the same bus we got industry standard cards. Without those industry standard cards the industry would've never taken off.

Lotus has a very significant aftermarket of add-on products. How successful have you been...

But *do* they? They have a very significant number of people who've announced add-ons and add-ins. I don't know that there is that significant a dollar market that has emerged yet for those products. In specific areas where people have addressed real problems, yes; reducing disk file size has done well. *HAL*—how well it's going to do in the long run is anyone's guess. It's getting a lot of hoopla and play at the present time—whether it'll do that well in the future we can't know.

The add-ins—I'm skeptical. Is somebody going to spend $300 on a spreadsheet and then $3000 on add-ins, all of which should have been there in the first place and most of which you can get for your $100 in *VP-Planner* anyway?

How successful have you been in getting some of these third-party people to support VP-Planner?

A lot of the products that worked as add-ons with *1-2-3* will also work as add-ons in *VP-Planner.* Add-ins—we're not taking that same approach, quite honestly, because I'm not sure that's going to work. We believe instead you should continue to enhance the product and give people

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What's the exact difference between add-on and add-in?
An add-on is a product that you use in addition that comes in from the outside and uses the file formats, etc. An add-in—you go in and actually hook it to code and use subroutines and capabilities within the product. The add-on does not—it comes in from the outside and uses the external capabilities. Add-ons that work with *1-2-3* generally work with *VP-Planner.* Add-ins cannot.

What impact do you see PSI as having had on the industry?
Well, we have had some impact in reducing prices, but we don't want to overplay that. Borland came out before us. We were well positioned is what I would say instead, in that we came in just before the massive production of very low-cost clones. When people pay $500 for their computer, they don't want to pay $500 for just one program.

Does the 386 open up any vistas?
Yes; we will be coming out with more sophisticated programs with more functions and more user interface and things like that. It allows much more enhancement of our products.

Is it a problem that there's essentially no standard operating system for it yet?
At the moment it is a problem, but I am certain that a standard will emerge rather quickly and that the standard will be upward compatible with MS-DOS.

Where do you see that standard coming from?
Hard to say right now. Microsoft obviously has the inside track. If they don't come out with something pretty quickly someone else's product—there are one or two out now—will take over.

But not IBM?
IBM has had a singularly unsuccessful track record with software, and I can't see that changing.

There's been some speculation that IBM's going to write off the microcomputer market entirely.
That would be tough for them to do, because that is the major market for all of the future. I would say that they're going to write off the low-end clone market, but I think you're going to see them playing aggressively in the high-end AT market.

There's also talk that their 386 machine won't be a micro in the current sense at all, but a server for multiuser systems.
Well, but I think you'll see a lot of other people doing that. The economic imperative for multi-terminal micros is quite real. It's a variation of the local area network—what you want to share is database files, and you might as well have this one thing in the center for database files. In fact the multiterminal micro is just another variation on the star LAN.

To what extent does your software support LANS or multiuser systems now?
VP-Info works on LANs. *VP-Planner* does also because of the fact that the database is not connected to the spreadsheet, and big spreadsheets get broken up into lots of little ones. Therefore you can be loading any one of the ones you want—the only problem is that *VP-Planner* currently does not provide record locking, only file locking, and when you get to multi-dimensional databases it's rather hard to figure how record locking could possibly work, because there aren't any such thing as records.

What types of license agreements do you offer to different types of customers?
We have LAN license agreements, we have corporate license agreements, we have educational license agreements—they're all different and tailored to the user in different situations. They're standardized—we can't have a different license agreement for every company we go to. The administration of anything like that would be a nightmare. But we are flexible in that each new type of requirement—if it's an industry-wide requirement, we'll come up with a license agreement. When LANs started to show up a lot, we came up with a LAN license agreement. We could have told them, here's our corporate license agreement, go buy a copy of the software for each terminal. They would say, well, that's not very satisfactory, because most of the time the terminals aren't in use, etc., etc. So we have a LAN license agreement.

Suppose someone wanted to market software successfully and looked around at all the dead bodies in the industry and wanted to avoid their fate. What should they do?
First of all, there have not been that many dead bodies among the software publishers. There've been a lot of dead bodies among people who wrote their own software and tried to build the next mega-corporation around it.

In terms of software publishers, I think that the major thing we did right was acquiring rather than developing software. We're beginning to see this all over the industry—Lotus is acquiring today more of its products than it's developing in-house, Ashton-Tate the same thing. So it goes. Microsoft is one of the few companies that continues to develop software in-house.

The other thing is get rid of the hugely expensive cost of goods. Three-ring binders and linen boxes are just not needed.

What did the people who tried to

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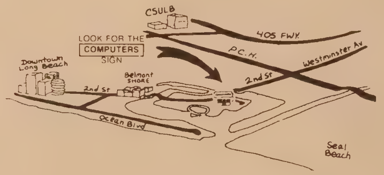

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build mega-corporations around their software do wrong?
They were unrealistic in terms of the revenues. You need a lot of money to keep an office open—to have an accounting department and a customer support department, all the other departments needed. If you've got one program bringing you revenues, that program has to be *wildly* successful for you to do that. *VP-Planner* would have been an unsuccessful product if it had been the basis for an entire company. Its revenues are insufficient to build a whole company around it alone, but put it together with a lot of other products, and it's a very successful product. It's the same as saying how successful would book publishers be if every author decided that his book would be so successful that he'd build a whole publishing company around it. It doesn't work.

You've just got to spread the overhead around a lot of titles. In the end, we see ourselves four or five years from now with 75 or 80 or 100 titles. And now you can afford all the various services you need within a corporation—if the cost is spread among that many titles.

How do you support your products?
We charge for our support—a dollar a minute with a $5 minimum. Now, the truth of the matter is that very, very few phone calls that come in ever get charged. The reason for that is that the frivolous phone calls never come in. People who know that there's a dollar a minute charge with a $5 minimum call once and get charged and don't call again. Or they read it in the manual and they don't bother to call in the first place. The result is that the people who do call usually have a genuine need for information, or what they're looking for is information that was not adequately covered in our manual. In both of those cases we do not charge.

We try harder. We spend the time to provide the information. But it doesn't matter how hard you try, somebody later on will stumble on things you didn't think of covering. So in general our policy is that if somebody calls in with an error in the product or something that's not properly covered in the manual, we don't charge.

How often does that happen?
Most of the time. We charge for very few of the calls, because the silly calls just don't come in. The real value of charging is that it scares away the stupid phone calls, rather than bringing us revenue.

We do feel a responsibility to provide legitimate support for legitimate questions. We do not feel a responsibility to support people who are too lazy to read the manual.

You've announced that the whole VP line will have Windows versions. Do you see Windows becoming a new standard?
Windows and compatible products. I'm not going to suggest that Microsoft will have the entire market to itself; I think they will not, because there are compatible products that we're looking at as well. But that metaphor, I think, is very viable. When you get machines like the 386 AT with one or two or three megabytes of RAM—640K machines don't interest me when it comes to *Windows*, because by the time you've loaded *Windows* you can get one application in and you're out of memory, so what's the point of having had *Windows?* But when you've got one or two megabytes of RAM, you can have *Windows* sitting in RAM, and out of various windows, the sizes of which you can increase and decrease, you can be jumping back and forth between your applications and transferring data. That's great.

Do you have any plans to eventually support operating systems other than DOS?
We're planning on it. We're planning to come out with an Atari ST version of *VP-Planner*, and we're also planning for *VP-Info* to have Atari ST, Mac and Apple IIGS versions.

What led you to choose the Atari ST?
I have a lot of respect for Jack Tramiel. Jack tends to make things work wherever he is. So I just waited a little while to make sure Jack really did have things under control there. He does, so then I went for it.

Now that the Mac has more or less arrived in the business world, do you plan on doing more development for it?
We will take another look at those products at this time. However, we're very busy. There's a lot of things that we are already doing, and unless we were going to go into some massive expansion, we could not really bring in a whole bunch of new products. We have a rather aggressive schedule as it is for this year, and I think that's about it, because if we were to bring in more products than we're planning on, the size of our company would have to grow to the point where we could not control it properly.

What niches do you think you'd like to get into that you're not doing now?
To make those kinds of comments now would be tantamount to pre-announcing products. I really don't want to participate in the vaporware business.

You don't, for instance, foresee hopping on the desktop publishing bandwagon at this point?
For us to get into that market right now, someone would have to come up with a pretty superb program and present it to us. Because right now it just wouldn't make any sense at all. There are a lot of very good products on the market, and we don't want to come out with another me-too product. There's just no point. ☐

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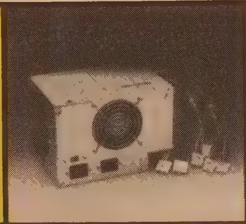

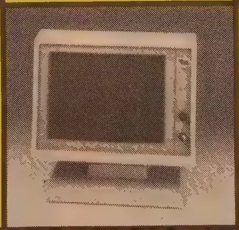

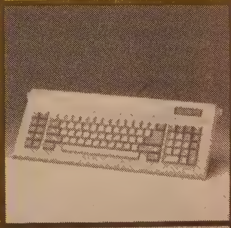

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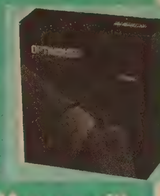

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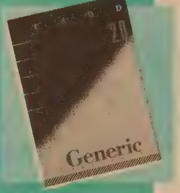

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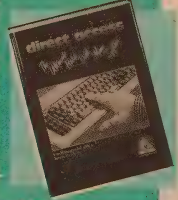

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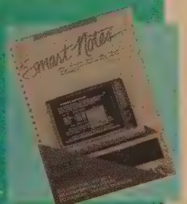
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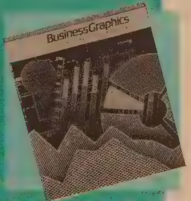
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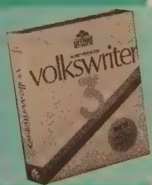
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The Zenith Z-181 Portable

A Revolution In Laptop Computers

By David C. Keith

Ever since the first 40-pound, so-called "Portable IBM-PC Compatible Computers" came on the scene about four years ago, globe-trotting journalists have been anxiously waiting for a machine which was truly portable, and which also qualified as a real computer. This meant that, as a minimum, it should have two full-capacity drives, as much memory as a desktop computer, the ability to run off batteries for a reasonable time, and a screen that was just as easy to read as the CRT on our desktop computers. For over a year now we have had several computers which adequately satisfied most of these requirements, but the readability requirement (in concert with the battery-operable requisite) has been notably lacking until the advent of the revolutionary Zenith Z-181 Laptop Computer.

At the recent COMDEX show in Las Vegas, several laptops sporting the new "Super Twist" LCD screens were introduced. Several even provided electro-luminescent backlit screens. The Zenith Z-181, however, was the only machine displayed which took that extra step and included a full aspect ratio, 10½" diagonal screen. With its inverse-video, brilliant blue letters on a white backlit screen, the Zenith is fully as readable as a standard CRT monitor. In fact, there appears to be enough room in the keyboard cover, which smoothly supports the screen through a full 150-degree viewing angle, to hold a full-size 12" LCD screen as soon as they become available. The very high 12-to-1 contrast ratio permits clear viewing well away from screen center. Using the PC Labs (PC Magazine) CGA Monitor Tests, we found that the circles were perfect, rather than squashed ovals, and the Grid Linearity Test showed ruler-straight lines to all four corners of the screen. The display actually appears somewhat sharper and more readable than a CGA monitor. Certainly the screen characters are more solid than those on the low-resolution IBM color screen.

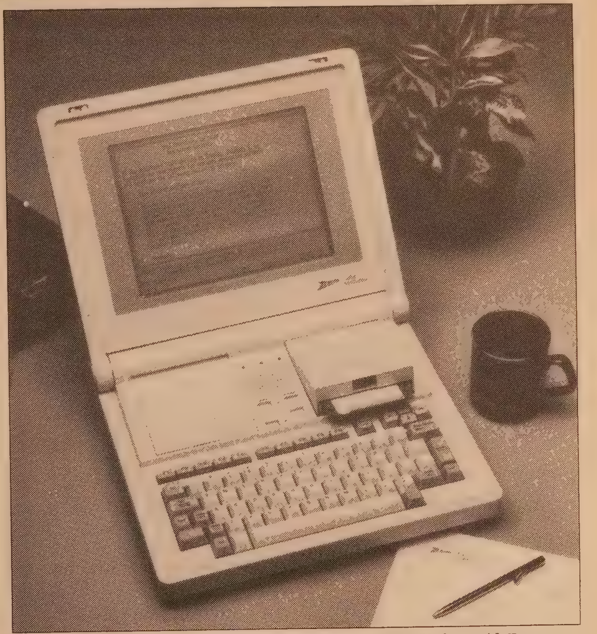
Other PC Labs tests showed that the Zenith executed all Processor Speed Tests at the same speed as a 4.77 MHz IBM PC. Sequential File Speed Benchmark Tests were every bit as fast as those in our transportable XT-compatible machine, although the Random Access Tests were somewhat slower. We were informed that the drives could be speeded up even further, but would then drain limited battery power much more rapidly as a consequence. The drives on the production model are noticeably faster than those on our previous beta test model.

The Z-181 has the now obligatory 3½", twin 720K disk drives, full 640K Random Access Memory, RGB port, parallel port and serial port (XT-type, DB-25 connector no less), external disk-drive connector, optional 8087 floating-point math co-processor and optional, internal 300/1200 baud modem ($399 additional). The external connectors are nicely hidden behind a snap-up rear cover.

It should be noted, however, that, in order to save battery power, the RS-232C serial port does not provide power for external devices such as mice. The user will have to locate a mouse with an external power source in order to manipulate graphics on the Zenith's excellent 640 × 200 pixel screen.

In tests with a beta test unit and with a production Z-181, we found that the CGA compatible machine was able to run a wide range of graphic games and business software without a hitch. Running a screen attribute program, the Zenith demonstrated its dexterity by displaying various shades of blue to represent different colors. When an RGB monitor was connected to the appropriate rear connector, a full 16 text colors were available via a simple keyboard toggle.

Which leads to what is probably the major shortcoming of the otherwise excellent Z-181 — the 75-key keyboard. To start with, the **[Ctrl]**, **[Caps Lock]**, **[Alt]**, and left **[Shift]** keys, along with a new key called **[Fn]**, are all grouped in a rather tight bundle at the lower left of the keyboard. It is very easy to hit a wrong key, or perhaps two at once. And if you find yourself shifting back and forth between a regular table-top PC and the Z-181, it could get very confusing. And the little blue **[Fn]** key? Pressing this key permits the **[Pause]** key to serve as a **[Num Lock]** key (I could find no description of the purpose of the **[Pause]** key in the rather limited Owner's Manual); the **[Scroll Lock/Break]** key to pinch hit as the **[PrtSc]** key; and the four cursor keys to double for **[Home]**, **[End]**, **[PgUp]** and **[PgDn]** keys. The only combination that really caused any awkwardness in our test was the double duty **[Del]/[Ins]** key. The cursor keys also proved to be rather awkward to use, primarily because they are shallower keys than the regular alpha/numeric keys, and the user must reach over and down behind the **[Back Space]** key to get to them. We found the keyboard layout of the NEC Multi-Speed much more familiar and easy to use, although its reduced-aspect, somewhat lower-contrast screen fell short of that on the Zenith.


With its exceptionally readable screen and other useful features, the Zenith Z-181 laptop represents a major advance in the portable computer field.

The numeric keypad shares positions with the regular alpha/numeric keys and will not really serve as an adequate substitute for a real numeric keypad. To access the keypad you must hold down the **[Fn]** key while depressing the **[Num Lock]** key. If you simply hold down the **[Num Lock]** by itself following keypad use, the keypad keys become temporarily disabled and do nothing. An optional, external numeric keypad would be nice.

The Z-181 weighs in at a respectably svelte 11.8 pounds including the rechargeable NiCad battery and a built-in real-time clock. It uses a standard CMOS 8088 CPU which we tested out at 4.74 MHz, and can run about five hours on a full charge, assuming minimal disk access. To help conserve power, the back light automatically turns off following two minutes of keyboard inactivity.

So perhaps the Zenith Z-181 Laptop computer isn't perfect yet—some of us are never satisfied. A hard disk would be nice, and a faster processor wouldn't hurt. We've heard that one or both of these improvements may be on the way shortly. Keyboard gripes aside, Zenith has put together a truly revolutionary computer — a lightweight, true portable which really does have all of the power of your friendly tabletop PC, and is just as comfortable to look at all day. ☐

WordStar: The Rebirth

By Ed Kahn

In the beginning, there was *WordStar*. Not that everybody loved it, but over the years it became the standard word processor. Even if a person did not like the program, it became so much of a standard that computer users were required to learn some of its arcane command structure. Programs from *SuperCalc* to *Sidekick* relied on the commands of *WordStar* for simple editing procedures.

But for some inexplicable reason, MicroPro, its publisher, failed to move forward. Pure inertia kept the program sales at an amazingly high level. Long after *WordStar* had become a real dinosaur in the age of fast computers equipped with hard disks, companies continued to buy the program. Seasoned *WordStar* users liked it so much that they found ways around the many problems inherent in using the program. The program did not support paths, so hard disk users had to install vast portions of the program on each subdirectory in which they wanted to use it (or else purchase *File Path*, a wonderful program which gets around the limitations of path requirements). If a person had two printers, it was necessary to install two different versions of the program—one for each printer. The problems go on and on, and MicroPro failed to do anything to address them. They came out with *Easy*, an entry-level program for writers with limited needs, and they came out with *WordStar 2000*, an elaborate program that veteran *WordStar* users rejected because it did not build on the *WordStar* command structure.

In the meantime, competition was breathing down the back of MicroPro. Software giant Microsoft came out with *Word*, a highly sophisticated program that gained a loyal following. And a tiny outfit in Utah came out with *WordPerfect*, which was well thought out and offered an array of excellent features. Proving that it was not too late to get a foothold in the industry, Satellite Software became a major force in word processing software and changed its name to WordPerfect Corporation. Meanwhile, MicroPro continued to develop new products, but ignored the huge base of loyal *WordStar* users. It was a mystery why a company with such a head start would ignore the demands of one of the most loyal groups of users in existence.

Several years ago, a group of ex-MicroPro employees developed a *WordStar* clone called *NewWord*. It solved many of the problems that frustrated *WordStar* users. But the company was never able to adequately promote the product. Corporate users continued to order *WordStar* or move over to one of the other excellent programs that had become available.

In the summer of 1986, something happened to change the course of MicroPro. In a corporate shakeup, new leaders were brought in with a commitment to breathe life back into the company. They soon announced that a new version of *WordStar* would be developed. Then they did something really unusual: instead of suing the folks who had created *NewWord*, they bought the company! This move saved them lots of time and legal fees. The result was that they were able to immediately work toward the release of *WordStar Professional, Release 4*. By the time you read this, the new revision of *WordStar* should be widely available, and if you like *WordStar* you will love this major update.

WordStar Professional 4.0 has a new look and feel—in many ways resembling *NewWord* more than its previous version, *WordStar 3.3*. But all of the *WordStar* features are here, plus a lot of new capability. I gave the new *WordStar* a thorough going over.

I ran the program on an ITT XTRA XP, an 80286 - based computer equipped with a hard disk. Although the program is designed to work on a machine with two floppy disks, like all of the best new programs, it demands a lot of memory and works most efficiently with a computer equipped with a hard disk. The program requires a minimum of 256K, but MicroPro has gone out of its way to make the program work as easily as possible on a machine set up with two floppies. The documentation has a special section on creating a single floppy disk that will contain all of the files you need to run *WordStar*. And they show you which files to add to the disk, provided you have enough memory, in order to be able to use additional features.

There are three elements in the *WordStar* package: *WordStar*, its new spelling checker, and a 220,000-word thesaurus program called *Word Finder*. If you have memory limitations, you can configure the installation to eliminate any of these modules. The minimum memory requirement for using *WordStar* along with the smallest configuration of *Word Finder* (with only 120,000 words) is 320K. The completely new documentation is well organized and readable. MicroPro has also included an interactive tutorial program on disk to get the new user up and running. This disk makes the assumption that the user knows nothing about either computers or word processing, so it is a good tool for the novice.

I'll focus on new and changed features of *WordStar* so that current users can decide whether they want to upgrade. If you never liked *WordStar*, you probably won't like it now. If you were hoping that the new version of *WordStar* would make it into a different product, you are out of luck. But if you like *WordStar*, but wished that it could do some of the things that the competition does, then you may find that this is your dream come true. MicroPro claims that they have added or updated 125 features.

WHAT'S NEW: PATH SUPPORT, UNERASE

For the hard disk user, the most significant change in the way the program works is its ability to support paths. The most helpful new command is unerase. This means that if, in your haste, you accidentally erase a paragraph instead of copying it, you can beg forgiveness from the program and make like it never happened.

The command is useful for moving text as well. Let's say you want to move a word to a different place in a sentence. The easiest way to do it is to use the erase word command, move the cursor to the new location, and then use the unerase command.

I also find the command useful for the simple replication of a line. Say, for instance, that you are creating a form and want a line repeated six times. The easiest way is to use the erase line command and then unerase it at the same place—thus restoring it to where it was originally—and then move to the next location and unerase again and again and again until you have as many replications as you want.

SHORTHAND, PRESET FUNCTION KEYS

Another new feature is what *WordStar* calls shorthand. This is a very simple macro facility that allows you to hit the Escape key plus any other key in order to invoke a series of keystrokes. The macro can be used to speed-type a word or phrase like your name, or it can be used to call up a series of commands like ^T^F^U, which transposes two words. In addition to letting you make up your own macros with the shorthand, the program also offers pre-set macros for calling up the date and time. Thus, for instance, you can insert the current date into a letter by typing the Escape key followed by @. I find these easily defined macros extremely useful. For instance, in preparing this review, I set "Escape W" to spell out *WordStar*.

Besides the shorthand feature, the new *WordStar* has 40 pre-set function keys designed to call up frequently used commands. These keys can be fairly easily redefined to do anything you want. Both the shorthand and function keys are a real aid to working quickly. I like these features, but find them a bit limited for some of the commands I frequently use. Unfortunately you cannot write long macros with either the shorthand or function keys. As a result, I use *WordStar* in conjunction with *ProKey 4.0*, a sophisticated macro utility that allows much more complex macros to be developed. This doesn't mean that I don't use either shorthand or the function keys—on the contrary, I often build these commands into my more complex macros. For instance, I have complex macros which allow me to type in the return address on my correspondence, including today's date, my salutation for letters, formats for mailing labels, envelopes, and postcards, all with the touch of two keys.

USE OF OTHER APPLICATIONS WITHIN A DOCUMENT

WordStar has added several other features that give a lot more power to the program by allowing you to do tasks unrelated to word processing while you are working within a document. You can now run other programs from within the document you are working on. For instance, as I type this, I can hit ^KF and be out

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Ed Kahn is the co-author of The Skeptical Consumer's Guide To Used Computers. *Copyright ©1987 by Ed Kahn. All rights reserved.*

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of this document and able to call up any program I like. So, if I need some information from another file while I am doing this review, I can leave this document, run another program, and, when I'm done, hit any key and be right back here as if nothing had happened. This is much easier than exiting this document, running another program and then re-entering this document and finding my place again. Similar commands allow you to do an array of other tasks from within *WordStar* as well.

Although you can run other programs from within *WordStar*, you still don't have the ability to view two documents side by side and shift material back and forth. With *Sidekick*, however, you can do just that. Read on and you will learn that MicroPro has an introductory offer that will get you *Sidekick* along with *WordStar*.

MATH FUNCTIONS

Another useful feature is the addition of math functions. By hitting a couple of keys, you suspend the work you are doing and move into a 14-function math calculator. You can easily move the results of the calculation into the text you are writing. Another math command allows you to get the sum of all numbers that appear within a block of text. So, for instance, if you are writing a letter to someone who owes you money, you can detail the money owed in a paragraph and then, at the touch of a few keys, get the sum of all of the figures.

SPELLING CHECKER AND THESAURUS

The new improved spelling checker allows you to check the spelling of either a word you type in, a word in a document, or the whole document. In any of these modes, the program is fast and efficient. I have removed all of the other spelling checkers from my system, as this does everything I want. It offers a number of convenient alternatives. The basic checker contains 87,000 words. While not the largest spelling checker on the market, it works beautifully with *WordStar*. It finds words phonetically as well as alphabetically—for instance, "newmoonia" yielded "pneumonia." For those in the medical, legal or financial fields, additional specialized dictionaries are available. When a word is found that the dictionary does not recognize, it gives you the option of adding it to your personal dictionary list so it will be recognized in the future.

The thesaurus is a program called *Word Finder*, which MicroPro has bundled with *WordStar*. The list contains 220,000 words, but the actual base list is only 15,000 words, compared to 20,000 in *Webster's New World On-Line Thesaurus* — the largest that I know of. Nevertheless, the program is easy to use and spews out a large list for any of the 15,000 base words that are addressed. Furthermore, you can then ask for synonyms for any of these words and so on. The program holds each of these lists in memory so you can retrace yourself through the previous screens by hitting the PgUp key. When you find the word you want, hitting the return key will substitute this word for what you had. I find a thesaurus helpful not only for finding synonyms, but also for making sure that I am using the right word for the meaning I have in mind. For instance, do I want "further" or "farther"?

OTHER NICETIES

MicroPro has gone out of its way to include features that make *WordStar* a pleasure to use. The directory that appears below the opening menu now shows the size of each file. You can call up the file by placing the cursor next to the listing in the directory and pressing return. And you can call up backup files for viewing. In earlier versions, you had to rename the file and then call it up. This new feature allows you to see the backup file, but it comes up in protected mode so you cannot alter the file in any way. You can, however, copy, rename, or erase the file even from within the document you are preparing.

CONCLUSIONS

MicroPro has done it right this time. Not only have they come up with a brilliant program, they've made it easy to get. Although *WordStar Professional, Release 4* sells for $495, the company has an introductory offer that provides for either a $100 rebate or the inclusion of *Sidekick*, *Graph-In-The-Box*, and *Ready* with the package. Current *WordStar* users can upgrade for $89.00

Is the program perfect? Of course not. There were a few features that I would have liked to see included in the program. MicroPro intends to continue refining the program and including more and more features in subsequent releases of *WordStar*. So let them know your suggestions for an improved *WordStar*, just as I will.

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Prokey 4.0 $129.95
RoseSoft, Inc.
P.O. Box 45880
Seattle, Wa 98145-0880

Webster's New World On-Line Thesaurus $69.95
Simon & Schuster Software
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Desktop Publishing On Your PC—Now

By Ken Milburn

Some companies have been waiting to implement desktop publishing until they could use their installed IBM PCs. The rationale is twofold: 1) It would be cheaper, since the PC is already there; 2) Less training would be required than if users had to learn a new system on the Macintosh.

Both these premises are a bit shaky. If your system is less than an AT with 30MB hard disk, it will need to be replaced or upgraded—at a cost approaching that of a Mac Plus with hard disk. And the laser printer (or its equivalent) required by the Mac also happens to be the only one that's really practical for publishing use on the PC. As for retraining, the screen/command design for DTP applications on the MS-DOS systems is a semi-clone of the Macintosh interface. It's an interface that's easily grasped, so that minimal training is required for use of the software. An understanding of the requirements for publication design is another matter, but that factor remains the same on either machine.

The justifiable reason to publish on the PC is that the available software makes it more efficient at producing the majority of corporate documents.

THE SOFTWARE

The only true WYSYWIG, designed-for-the purpose MS-DOS publishing software that's been shipping long enough to prove itself, is Xerox's *Ventura Publisher.* I mentioned that the PC application is more efficient for producing most "corporate" publications. That's because it can "read" the text created by word processors and other PC programs. You then "pour" it into a pre-defined *Ventura* page layout that tells the laser printer or typesetting machine how to make the page look—where headlines and subheads should be located and what size and style they should be; the formats for body copy; how many columns there are on a page, and so forth.

Ventura is quite flexible and powerful—and therefore complex. But the process of designing a page layout is a "point and click" exercise, so the learning curve is the trial-and-error one of learning what makes things look good. *Ventura* makes it easy to make changes if you don't like what you see.

> **The justifiable reason to publish on the PC is that the available software makes it more efficient at producing the majority of corporate documents.**

You set up a style sheet by defining the dimensions of the page, number of columns, space between columns, leading between lines, etc. Then you specify how each section of copy is to be formatted and placed: headlines, subheads, headers, chapter titles, body copy, etc. You can name each of these, and they will appear on a menu. When you read in a text file it will be formatted as body copy. You can insert text for the heads, pull quotes and annotations—or you can highlight text with the mouse, then pick a section name from a sidebar menu—whereupon that block will be reformatted to suit the pre-defined style.

Once you've set up a style sheet, you can use it to format a page or an entire book, and viewing your text in the basic layout takes only seconds. That's why *Ventura's* so good for standardized typesetting: academic reports, books, legal papers. If the copy comes from *Word, WordPerfect, MultiMate, VolksWriter* or *WordStar,* formatting commands like boldface, underline, italics and centering will be preserved. Even though the GEM interface it uses is very Macintosh-like and What-You-See-Is-What-You-Get, *Ventura* isn't as interactive or as flexible for designing on the fly as the Mac's prominent page layout programs, *PageMaker* and *Ready-Set-Go 3.* Its efficiency at standardized typesetting makes it better suited for straight businesses, but not so great for a graphic designer, art director or ad agency.

Ventura supports a wide range of monitors, laser printers, Epson-compatible dot printers and mice.

INTEGRATING OTHER APPLICATIONS

Since *Ventura* can typeset "plain" text from any ASCII file, you can insert a spreadsheet or a list of names from your database—provided that the originating application will re-direct printer output to a disk file. You can also insert either line-art (CAD) or bit-mapped ("paint") graphics. Line art is very accurate for technical drawings and will print at the highest resolution the printer is capable of. *Ventura* will insert drawings from *GEM Draw* and *Chart, AutoCAD's* .DFX files, *Lotus* and *Mentor* Graphics.

"Paint" images—more suitable for free-hand illustration—are formed with dots, so their definition depends on the density of dots the program forms. *Ventura* will insert "paint" images from either *GEM* or *PC Paintbrush.*

Since there are so many variations in "standard" hardware/software and software/software interfaces for applications running on PC/MS-DOS computers, it's important to keep all software systems within the same windowing program. That way, devices and drivers can be shared between applications uniformly.

If you are planning to pull in information from other applications, make sure that text output can be printed to disk or converted to ASCII. If you will need extensive illustrations, the most versatile tool kit would consist of *GEM Draw* and *Chart,* a drafting program that produces *AutoCAD* compatible files, and *PC Paintbrush.*

Using GEM applications will give you automatic compatibility with your laser printer and any fonts specified for it. *Gem Draw* is a quick and easy way to create simple line art, logos and diagrams. There are several image libraries available full of business "clip art." *GEM Chart* makes it easy to produce impressive looking "3-D" business graphs and incorporates a very slick system for designing word-charts.

If you have to do engineering drawings, you'll need a CADD program. *AutoCAD* itself may be a bit steep at $2,500, if your use is only occasional, but the same company publishes *AutoSketch* for a mere $80, and it's a piece of cake for even a beginner to use. For just a little bit more money, you can get even more "architectural" features in *GenericCADD*—but you'll want the drafting extensions and the *AutoCAD* conversion utility.

If you want to capture graphics from applications that don't have a direct interface to *Ventura*—or if you want to capture images with a scanner, you will benefit from Z-Soft's *PC Paintbrush Plus. PC Paintbrush Plus* is probably the champion of affordable (less than $150) paint programs for the PC, makes good use of EGA if you have it, and can capture screen images from any other program that produces images on your monitor. You can also use it to capture and enhance the image from any of the current crop of scanners for the PC.

The number of possible business uses for scanners goes far beyond the scope of this month's column. I hope to get into them in depth soon. For now, suffice it to say that they can quickly digitize the image from any photograph

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Copyright © 1987 by Ken Milburn. All rights reserved. Ken Milburn is a freelance writer on Microcomputers. His articles have appeared in numerous computer publications, including PCWorld, InfoWorld, Computer Graphics World *and* MicroTimes. *He also does system configuration for small businesses. He can be reached at (415) 331-6296 or by sending E-mail to (ken) on The WELL, (415) 332-6106.*

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or printed material. If you're not much of an artist—or simply don't have the time to be one—a scanner is a great way to pull images into your publications. Line art reproduces almost as well as the original. Images with lots of shades, like photos and illustrations, are going to look a bit pimply. Which is why it's nice to be able to use *Paintbrush* to edit and enhance them.

THE LASER CONNECTION, OR, POSTSCRIPT AND WHY YOU NEED IT

It might have made for a more logical sequence to talk about the practical configuration for PC hardware first, but the use of a laser printer is essential to quality publications. Moreover, unless your requirements for type styles and graphics are minimal, there are several reasons the use of a PostScript-driven laser is almost essential.

Most other lasers can only produce 1/4 or 1/2 page of full-resolution graphics and require that each change in type size be described as a separate font. So if you want to use Helvetica and Times Roman, each in three "point" sizes, you'll have to purchase and download *six* separate fonts. PostScript allows any typeface to be reproduced at virtually any type size without loss of resolution.

Page description languages provide the easiest-to-use and most efficient means for integrating illustrative graphics with publication-quality type and page layout design. PostScript is the page-description language used by nearly every DTP-related application running on either the MAC or the PC. So as new applications are developed, they are most likely going to have a PS (or Apple LaserWriter) driver. Many of the more sophisticated publishing systems running on super-micros and minicomputers also use PostScript, so it helps in providing a "connectivity" path, too.

PostScript also provides access to the largest number of true typesetting fonts—which is one of the reasons why only PS will "talk" to the Linotronic typesetting machines used by so many printing houses. The Linotronics 300 and 600 machines will produce magazine-quality (1,200 - 2,400 dpi) camera-ready copy exactly as it was designed on your computer.

You can see that the use of a PostScript laser printer can greatly expand your business' publishing talents. However, if you already own one or more Hewlett-Packard or Canon laser printers, all is not lost. One of the most complete lines of laser printers is manufactured by QMS of Mobile, Alabama. A subsidiary, The Laser Connection, makes a product called the PS Jet that replaces the top (controller) of any H-P or Canon laser printer. It has been on the market for several months in a version compatible with the Apple LaserWriter and semi-compatible with Diablo daisy-wheel printers.

The latest version, released just in time to test for this column, is called the PS Jet Plus. It not only gives you PostScript capabilities, but also complete compatibility with the LaserWriter Plus (eight more built-in fonts). It seems markedly faster than the LaserWriter (about 50%, according to TLC). But the big news is that it also features complete emulation of H-P's LaserJet and LaserJet Plus—and it also emulates H-P plotters and will do a full *legal-size* page of 300 dpi graphics. So now you can get publication-quality output from any application that supports any of those protocols.

I'm lucky enough to be using a new Mac Plus to help with an article on scientific publishing at the moment, so I was able to try out the new PS Jet with both the Mac and the (RAM Systems) 386. Haven't had time to try everything yet, but *Word, WordPerfect* and *Ventura* work fine in both modes; *Ready-Set-Go 3, MindWrite* and *SuperPaint* (on the Mac) print with no problems. If you have PC applications that aren't compatible with any of PS Jet's emulations, you might consider reading them into *Ventura* and then printing from there. It's an extra step, but the output is gorgeous. If you're considering purchasing new laser printers, you can buy the whole printer from TLC's parent QMS as the PS800+. Or, you can buy QMS' low-cost KISS laser printer, add the PS Jet and save $1,000 by putting the two together yourself.

> **Unless your requirements for type styles and graphics are minimal, the use of a PostScript-driven laser printer is almost essential. PostScript allows any typeface to be reproduced at virtually any type size without loss of resolution.**

THE PC HARDWARE CONFIGURATION

The systems I'm recommending here aren't cheap. You'll need a fast computer, big hard disk, laser printer, mouse and probably a large-screen, high resolution monitor. But I've tried to pick the components that will give you the highest return on your invested dollar. I've also tried to pick the systems that offer the easiest upgrade path from the components you already own.

The PC was originally designed to follow one set of hardware standards for text and another for graphics. Publishing requires integrating text and graphics, even if your publication contains no pictures. That's because it's only possible to create a variety of type-styles and fonts by "drawing" them. Only since the popularization of EGA as a standard has it become more fashionable and practical to create paragraphs in graphics mode and integrate it with text. Not all software publishers have caught up with this concept, and those that have aren't consistent in their support of various hardware standards. So if you're not careful to pick a versatile hardware configuration, you may find yourself unable to use some of the software you depend on.

One of the reasons IBM created this graphics/text schizophrenia is that it takes longer for the computer to draw a letter each time it appears on screen, instead of simply flashing a pre-defined character on the screen. Faster processors, like the 80286 in the IBM/AT, are capable of making this problem invisible. The faster your computer, the better. Don't consider spending much time doing publishing on anything less than an 8MHz AT. Better yet, upgrade your XT or AT with a 80386 motherboard like the one from RAM Systems. At just under $2,000, it's not a cheap solution, but it sure beats tossing out your present machine and buying a $7,000 Compaq DeskPro 386. I'm recommending the RAM motherboard because I've been using it for several months and know that it works as advertised. Some of the 386 add-in cards may do much the same for you, but I haven't gotten my hands on any of them yet.

You will need a hard disk. If you already have one, you may want to upgrade it to a larger, faster one. Font and graphic files are hungry for storage space. A full page, 300 dpi graphics image needs about 1.5 megabytes of memory (that's why the LaserWriter has 2MB on board), so you can see that anything smaller than 20 or 30MB will fill up pretty fast unless you back up frequently. Furthermore, you'll probably be loading quite a few disks' worth of new applications software onto your system.

The cheapest practical display combination is a Hercules compatible card and monochrome monitor. Color doesn't help much in desktop publishing, since laser printers are all monochrome output devices. Still, it may be useful in some of the other applications you are running, for instance, creating presentation graphics. If you need color and want to get away with a single monitor and card, pick an EGA card and MultiSync monitor. Either of these choices can be used as the "standard" monitor in combination with a "full page" monitor like the Wyse, Sigma, Viking or Genius.

You'll get the most productivity out of a black-on-white, oversized, ultra-resolution monitor that can display two full facing pages with readable 8-point text. That's because you spend less time zooming in and out to see how well your page design balances and printing "proof" pages. The most cost-effective (and compatible) of these monitors is the Wyse 700 at $995 for both display card and monitor. Competitive monitors may require a second monitor and generally cost 50-125% more. Though most are larger and of higher resolution, they are generally compatible only with *Windows, GEM (Ventura)* and *AutoCAD*. Your other PC applications will have to run on another monitor.

Finally, you will need a mouse. Arrow keys are too slow getting the cursor from one corner of the screen to another. Digitizing pads are costly and aren't supported by most DTP programs (unless they emulate a Microsoft mouse). Most up-to-date publishing software for the PC runs in a "point-and-click" environment similar to the Macintosh. You'll find it a pain to have to wait for the direction keys to move the pointer to the menus and to sections of text that you want to select for formatting. Pick a Microsoft mouse, or one that's fully compatible, like the Logitech C7+ I've mentioned in past columns.

COST AND THE FUTURE

Assuming you already own an AT, here's what you can count on spending. These are "asking prices." Shopping the advertisers in these pages should net you some significant discounts.

Let's assume you own the basic 640K AT. A 39ms hard disk can be had for around $700. The Wyse 700 monitor is $995. Count on about $120 for the mouse. A QMS KISS laser printer and PSJet are $1995 and $299 (that's about $1,000 less than the list for most PostScript-only printers). *Ventura Publisher* goes for $895. That's $7,700 for turning your AT into a very competent office publishing system.

If it sounds like too much trouble to put all this together—and if you don't already own a hard-disk equipped AT—consider the very reasonably priced pre-packaged publishing system from AST. It includes *Ventura Publisher* and most of the equivalents in this recipe, but you'll surely miss PostScript and the other software tools I've described, depending on your needs. ☐

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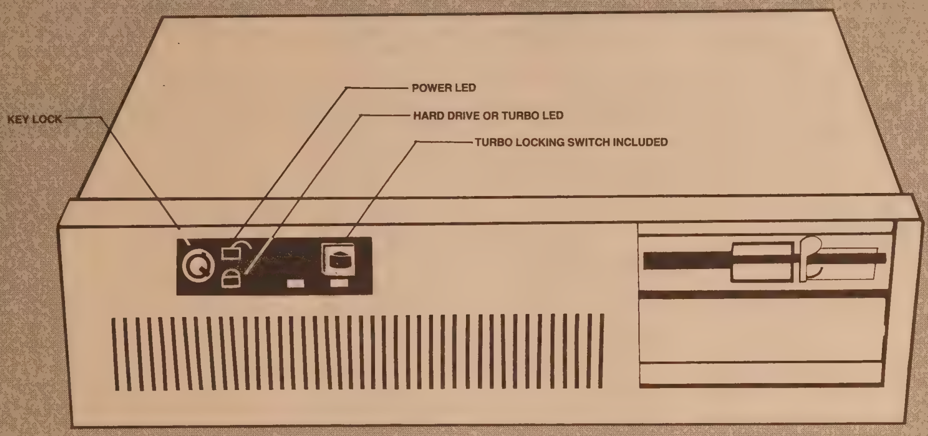

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The Look And Feel Of Real UNIX

By Bennett Falk

The UNIX/DOS dichotomy provides an odd perspective on all the foofaraw over the "look and feel" of software. When I first started using UNIX, I went to great lengths using aliases and shell scripts to make UNIX look like the CP/M system I had been using at home. And for as long as I've had a PC, I've wanted something like a UNIX environment on it.

For people who work with UNIX, it is helpful to have an inexpensive and thoroughly compatible UNIX environment in which programs and techniques which will migrate to the UNIX system can be developed.

It became clear over time that the UNIX features of interest in the DOS world were not the system internals, but the utilities and the user interface. Compatibility with DOS file structure and applications also emerged as an important consideration.

The MKS Toolkit from Mortice Kern Systems (43 Bridgeport Road East, Waterloo, Ontario N2J 2J4 CANADA, 519/884-2251) is a set of DOS compatible utilities similar to those found on UNIX systems, and it's a very interesting package.

GETTING WHAT YOU SEE

First of all, the *Toolkit* is *not* a complete UNIX system—all its files are loaded into the standard DOS filesystem, and can be used from DOS with no difficulty. The toolkit does not magically endow your computer with either multi-user or multi-tasking abilities. It doesn't even attempt to remake the DOS filesystem on your hard disk (and indeed, you don't even need a hard disk to use the toolkit).

What this product *does* do is provide, at a modest price, lifelike replicas of about 70 of the utilities that make UNIX fun to use. The package includes the pattern scanning language "**awk**", the "**grep**" family of file scanning utilities, the stream editor "**sed**", a "Korn shell compatible" command interpreter "**sh**", and the much-loved screen editor "**vi**". There are enough other utilities in the package that it could easily be used to prototype and de-bug UNIX shell scripts. (Even the arcane "**rev**" utility, which reverses lines in a file, is included—you too can turn things around.)

MOVING FILES BETWEEN DOS AND UNIX

In addition to providing a DOS environment in which UNIX compatible shell programming is possible, the system also includes several utilities ("**dd**" and "**cpio**") to facilitate importing and exporting files between DOS and UNIX.

DOS ordinarily does not allow users to get at the "raw" disk drives, preferring to interpose a filesystem between the user and disk storage devices. In UNIX it is not uncommon for archiving programs to address raw devices. The MKS *Toolkit* provides this capability, though not in the most straightforward way. Whereas in UNIX the program "**cpio**" can address diskettes more or less like streaming devices, the MKS "**cpio**" cannot. It must be used in conjunction with the "**dd**" command, which can read and write diskettes that are not DOS filesystems. This is a minor inconvenience in return for the ability to read and write **cpio** archives from any UNIX system. The **cpio** included in the *MKS Toolkit* produces archives fully compatible with UNIX "**cpio**".

AHHH, "VI"!

The "**vi**" that comes with the toolkit is compatible with *vi 3.5* and is truly a delight. *Vi* is a large program, commonly well over 100K on UNIX systems. Various implementations of UNIX and UNIX look-alikes have included *vi*, but these products are often cumbersome. In a true multitasking system, the 100K+ *vi* program must share main memory with a kernel that presides over task scheduling and a shell which acts as a command interpreter. On an XT trying to do multi-tasking with 512K of memory, *vi* can be *very* sluggish.

Some *vi* implementations have attempted to improve performance by cutting back on features— the "Z" editor from the makers of *Aztec C* is a reasonable subset of *vi* capabilities in an executable file that is only about 35-40K.

The *vi* implementation that comes with the *MKS Toolkit* splits the difference. The program itself is just over 80K in size. Because it is running under DOS, it doesn't really need to share memory with anything else, and it seems to perform quite well.

Several interesting changes have been made. The video display used by the MKS implementation is memory mapped and quite fast— fortunately it does not try to simulate the relatively slow video that is common on UNIX systems. Nor does this implementation bother with getting terminal information in the standard UNIX way— there is no "**termcap**" file to be read as the program is loaded.

Vi is a "modal" editor. The user selects any of three different "modes" during an edit session, with different capabilities available in each mode. Ordinarily there is no on-screen indication of what the current mode is in the UNIX versions. The MKS "**vi**" indicates mode quite handily by changing the cursor attribute— "insert" mode is marked by a blinking block cursor, "cursor movement mode" is marked by a solid underline cursor.

It's great fun that the MKS "**vi**" also allows "shell" escapes to run other programs and has the ability to run an external command on the current edit buffer.

The MKS "**vi**" seems to have some problems with recognizing partial lines at the beginning of large pieces of text. Deleting text from the middle of a paragraph to its end seems to consistently delete only full lines below the cursor, leaving in place any partial line that contains the cursor. Otherwise the editor behaves quite well.

THE MKS SHELL

The original UNIX command interpreter is known as the Bourne shell. It is a relatively compact program which functions equally well as a job control language and ad hoc programming tool. For most of the commercial life of UNIX, the main competition to the Bourne shell has come from the C-shell developed at UC Berkeley. The C-shell has a number of features (most notably command aliasing and "**history**") that are absent from the Bourne shell. It also has all the disadvantages of a large program—it takes more time to load and may not run as efficiently as the Bourne shell.

In recent years the Korn shell has emerged as an alternative to these traditional UNIX command interpreters. It offers the efficiency of the Bourne shell as well as the additional features for which the C-shell is prized.

The MKS implementation claims to be Korn shell compatible, and is certainly an excellent attempt to create a UNIX-like shell for DOS. Certain features of UNIX shells are not supported—commands cannot be put in background and filenames must obey the DOS conventions.

The manual warns users that the shell may collide with memory resident programs (such as *SideKick*) which will not anticipate the dynamic memory demands of the shell. Still, in a few hours of use, the MKS shell had fewer conflicts with DOS executables than other shells I've used.

The shell's aliasing and history features work, but the command substitution mechanism is clumsier than that of the C-shell. In addition to pipes (which connect the output of one command with the input of another) and redirection of both input and output, the shell supports "embedded" commands. In the MKS shell, as in UNIX, any command may contain another command enclosed in grave (` `) marks—the enclosed or embedded command is executed first and its output, if there is any, appears in the larger command line in place of the embedded command. This is quite handy for introducing a list of items into a command.

All in all the *MKS Toolkit* is quite a bargain for anyone who wants the "look and feel" of UNIX on a DOS budget. ☐

List of utilities included in the *MKS Toolkit*

awk	banner	basename	c	cai
cat	cd	chmod	cmp	comm
cp	cpio	ctags	cut	date
dd	dev	df	diff	dirname
du	echo	ed	egrep	expr
fg	fgrep	file	find	getopt
glob	gres	head	help	jobs
join	kill	lc	line	ls
mkdir	mv	nm	od	paste
pg	prof	ps	pwd	rev
rm	rmdir	sed	sh	size
sleep	sort	split	strings	strip
sum	switch.com	sync	tail	tee
test	time	touch	tr	uniq
unstrip	vi	wc	which	

Bennett Falk is an Application Specialist for BASIS, Inc., and has been enthralled by UNIX, its uses and users, for quite some time now. *Copyright © 1987 by Bennett Falk. All rights reserved.*

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DOS SOLUTIONS

Speeding Up The Job

By Wayne A. Yacco

This column continues to examine considerations for writing and using batch files. Efficient batch files are useful in more circumstances than their slower alternatives.

The batch job for this month is actually a sample modification to **AUTOEXEC.BAT** that allows selective inclusion of commands. Using a similar approach, each time you boot up, you can customize your system with a few "Y" or "N" keystrokes.

Last month we suggested pipelining the text of an **ECHO** statement as an alternative to redirecting a limited amount of input from a file. A second issue, which the pipelining solution addressed, is a reduced need for remarks regarding the now-eliminated extra file. This can be significant in a batch file, even if not because of storage or memory requirements, because each set of remarks in a file slows down processing. It is good practice to use a GOTO command to branch around only a few remarks. If there are many sets of remarks, however, efficiency will suffer despite the use of control transfers. Since **COMMAND.COM** is an interpreter, it searches for each destination, from the beginning of the file, every time it is referenced in a GOTO.

Unless batch files are processed to their best advantage, they can be very time-consuming. They will be too slow for many applications that require large jobs. Fortunately, substantial improvements are obtainable if the proper hardware and software are available. To a lesser extent, later versions of DOS have faster command processors and can offer some improvement over earlier ones.

Most performance degradation is due to the characteristics of the storage device on which the batch job is stored. This is because the job processor, **COMMAND.COM,** suffers from one of the same limits shared by all memory-resident programs. Memory-resident programs must have their share of memory allocated when they are loaded and still allow the application programs to have maximum access to the available resources.

When **COMMAND.COM** processes a batch job, the limited amount of work space available causes it to make repeated accesses to the job file in on-line storage. The faster that storage is accessible, the faster the job will be executed. Placing the batch job in a RAMdisk, such as the **DOS VDISK,** provides the optimum environment for batch processing. A hard disk is an acceptable substitute for a RAMdisk for most jobs. Truly fast hard disks will access jobs so quickly that processing may be nearly indistinguishable from a RAMdisk-based job.

DOS allows the inclusion of a **PATH** in the **ENVIRONMENT** to specify where the command processor should search for programs, external commands and batch jobs. Locations on the **PATH** are searched in the order they occur on the **PATH.** If batch jobs are kept on a RAMdisk, then their permanent storage location should not be on the **PATH** before the RAMdisk location.

The **PATH** is specified with the **PATH** command. For example, **PATH=E:\RAMJOBS;C:\DOSFILES;C:\BATFILES** might be used to specify a path to a RAMdisk directory containing some of the system's DOS utilities and batch jobs. This directory must precede the hard-disk directories which contain the permanent copies of the same files. Use **PATH** without a parameter list to display its current setting. (The **SET** command will display the entire environment including the current path and can be used to set the path as well.)

```
echo off
goto :enddoc    A U T O E X E C
rem  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
rem     This job creates a PATH to the following
rem     directories: E:\, C:\DOS, c:\DOS\BAT,
rem     c:\DOS\UTIL, and C:\.
rem
rem     BREAK and VERIFY are set ON. the DOS
rem     prompt will include the current directory.
rem  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
rem
:enddoc
path e:\;c:\dos\bat;c:\dos;c:\dos\util;c:\
ctty nul
command \c c:\drive_e.bat
ctty con
prompt $p$g
break on
verify on
cls
goto :skip
rem
rem  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
rem     The MORE command displays the contents
rem     of the file GREET.DOC one page at a time.
rem     GREET.DOC is a reminder file which lists
rem     the day's agenda.
rem  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
rem
:skip
more < c:\greet.doc
:end_of_file
```

```
echo off
goto :enddoc     D R I V E _ E
rem  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
rem     This job copies files to VDISKS. The batch
rem     files are copied from drive C: to E:\ and from
rem     drive D: to E:\D. The TURBO LIGHTNING
rem     dictionaries are transfered to F:\LIGHT.
rem  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
:enddoc
ctty con
echo Terminate job to omit transfer of files to VDISKS.
pause
ctty nul
copy c:\command.com e:\
copy c:\dos\find.exe e:\
copy c:\dos\more.com e:\
copy c:\dos\sort.exe e:\
copy c:\dos\bat\*.bat e:\

del e:\ipl2.bat
del e:\srpath2.bat
del e:\d2.bat
del e:\go2.bat

md e:\d
copy c:\command.com e:\d
copy d:\bat\*.bat e:\d

del e:\d\srpath2.bat
del e:\d\c2.bat
del e:\d\go2.bat

copy d:\light\*.dic f:\light

ctty con
exit
:end_of_file
```

On an IBM PC/AT the RAMdisk can be placed in extended memory (above the DOS one-megabyte memory limit). This allows practically anything to be retrieved from RAM including all of the DOS utilities, batch files, and **COMMAND.COM.** Large memory-intensive data base files, such as dictionaries and thesauruses, that require frequent random lookup, are also good candidates.

Aside from the matter of storing jobs on the right media, the operating characteristics of the command processor will impact processing speed. **COMMAND.COM** is divided into a resident portion and a transient portion. The transient portion often requires reloading into memory, and the storage medium from which it is loaded will have the same impact on processing as does a job file's medium.

DOS includes provision for a **COMSPEC** in the **ENVIRONMENT** to allow designation of the command processor's location. DOS uses the **COMSPEC** specification to search for **COMMAND.COM.** If the command processor is loaded from a RAMdisk it can significantly speed up processing. **COMSPEC** may not be referenced first, however, while executing commands from the root directory of the boot drive. (This is just one of several arguments for storing the minimum number of files in the root directory. Others include protection from certain side effects, better disk organization and limits on the number of directory entries.) The **COMSPEC** is specified with the **SET** command.

Earlier versions of the DOS command processor have smaller resident portions and may require more time to load the transient portion as a result. Depending on processing requirements, they may also require more frequent loading of the transient portion. Employing the above improvements will have a correspondingly greater effect.

This column has provided suggestions that can improve the processing characteristics of batch jobs. Using these suggestions can allow batch jobs to be employed in applications for which they would otherwise be unsuitable because of their potentially-slow processing speed.

Implementation Notes

This month's **AUTOEXEC.BAT** file includes statements that can be used to conditionally include the transfer of disk files to a RAMdisk. You should change the contents of **DRIVE_E.BAT** to the command lists that suit your needs and rename the file with a label descriptive of its task. There is no limit to the number of such conditional jobs that can be added to **AUTOEXEC.BAT.** ☐

Wayne Yacco is an independent data-processing consultant with a practice in the San Fernando Valley. Since 1980, he has assisted clients in the implementation of microcomputer-based systems. Questions may be sent to him at P.O. Box 4239, Burbank, CA.

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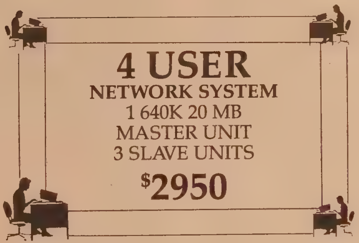

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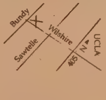

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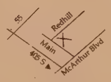

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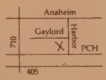

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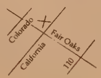

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Government Bulletin Boards— Half Of A Free Lunch

By Brock N. Meeks

So much for free enterprise. Six years ago the Reagan Administration began its push to make the government into a paperless bureaucracy. (A "paperless bureaucracy" is as much an oxymoron as "jumbo shrimp" or "military intelligence," but I digress.) To facilitate this move, the Administration turned to the private sector. Government officials presumed that private companies would jump at the chance to set up new computer-information systems, recouping startup costs by selling government data to the public.

The Administration figured a more efficient private sector could provide database access to government information for less. So much for pipe dreams.

CATCH-22

Information companies are reluctant to fund the startup of database systems using government data without some assurance that they will turn a profit. Those are hard assurances to nail down. The glitch, and it's a big one, is that government data can't be copyrighted. A competitor could purchase the same data from the government (which readily sells magnetic tapes of all this information) and sell it at a lower price.

In order to overcome this reluctance by the private sector, some governmental agencies have offered their information to private companies on a monopoly basis. This awarding of an information monopoly has boomeranged; prices have skyrocketed. This trend caused Anne A. Heanue, associate director of the Washington office of the American Library Association, to say in an interview: "We haven't seen any example yet where it's been less expensive than when it's been handled by the public sector [the government]."

An example of this rise in costs is the current state of information coming from the Department of Agriculture. In 1984 the DOA gave Martin Marietta a monopoly on its information. Previously, you could directly access information from the Agriculture Dept. for $60 a year, with online costs weighing in at $42 per hour. Today you have to pay Martin Marietta $1,800 a year, plus an additional $12 an hour after you've racked up 150 hours of online time. (You can also access this information via Dialog for $25 a year and $96 per hour; Dialog buys the information from Martin Marietta and resells it.)

The higher prices being charged by these private sector information providers is defended by Administration officials, who claim that the private sector often enhances government information and puts it in easier-to-read form. Considering the price difference, this is a weak defense, at best.

This trend of higher information costs is a particularly disturbing one in that it further widens the gap between the "data haves and have-nots." On one side you have Big Business customers with deep pockets who can afford these high prices. The flip side is that libraries, students, you and I, cannot.

Fortunately for you and me, both Congress and the Office of Management and Budget acknowledge that a better way must be found to provide government computer services while guaranteeing public access. One of these "new ways" is a recent trend in government sponsored bulletin board systems (BBSs).

FREE LUNCH, ALMOST

The government has hardly been a fertile ground for BBSs; any comparison to the gestation cycle of trout, for instance, is out of the question. However, some encouraging signs are emerging.

Two years ago there were only a handful of government sponsored BBSs. Today there are over 24 such systems being run by government or quasi-governmental agencies. The main reason for this move to BBSs is better information distribution. With the advent of cost effective hard disks, it is a simple procedure to transfer data from magnetic tape to a 30 or 40 meg hard drive. From there it's a short hop to the bitstream. A BBS also frees up the time of employees, as they have to spend less time satisfying demands for information. Anyone with a modem can dial in and download.

And it's free, for the most part; you only pay for the long distance phone call. Should you subscribe to PC Pursuit, your costs are further cut. Because PC Pursuit services the Washington, DC area, you can make all the calls you want for only $25 a month—the cost of a PC Pursuit subscription.

These boards aren't as sophisticated as the systems you end up paying hundreds of dollars for, but they still contain a wealth of information.

LINEUP

Here's a listing of some of those government sponsored BBSs. When calling, take time to look around for files containing numbers of other government boards.

The Economic Bulletin Board
Phone: (202) 377-3870 or (202) 377-0433 300/1200 baud
Operating Agency: Office of Business Analysis

This board contains hundreds of files dealing with all aspects of the US economy. Here you'll find current economic news from the Department of Commerce's Economic Affairs (EA) agencies including press releases, economic indicators, official DOC summaries of economic news, information on how to obtain data tapes, and summaries of reports and studies produced by EA agencies. Also included are press releases issued by the Bureau of Labor Statistics.

State Data Center Bulletin Board
Phone: (301) 763-1580 (voice)
Operating Agency: Bureau of the Census

You'll have to call the above number to get pre-registered on this board. Once you've been registered you'll find news about new Census Bureau programs, Census publications, reference material on state demographics, and more. This information can be used by marketing research or by sociologists. If you're into statistical analysis, this board is a dream.

Microcomputer Electronic Information Exchange
Phone: (301) 948-5718 300/1200 baud
Operating Agency: Dept. of Commerce, National Bureau of Standards.

This board contains information on the acquisition, management, and use of small computers. Other files containing sources of information on topics such as conferences, Federal publications and activities, user groups, and other bulletin boards. Recently the board has started to specialize in computer security topics.

National Center for Health Statistics
Phone: (301) 436-6346
Operating Agency: Public Health Services

The National Center for Health Statistics is one of the major Federal statistics agencies. They work closely with the World Health Organization to upgrade the information available about the state of health worldwide. Here you'll find many files set up as *Lotus 1-2-3* templates. Any area of health that you're interested in is located here. For example, you can download a file of all the health care facilities for the elderly, grouped by state. There is a special section that contains a major survey of the state of health in the US. These files are broken down by state, and are set up as *1-2-3* templates.

TAKING IT HOME

These are just a few of the available government BBSs. If the current trend continues, we could see the current crop triple by year's end.

Remember that none of this data is copyrighted, so you're free to download it and do with it as you will; you can even package it and resell it for a profit. Or you can simply start your own government information BBS.

Now that's real free enterprise...

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DATA BASE MANAGEMENT

The R:BASE Saga,

Continued

By Warren Sirota

In the last column, I demonstrated a fairly complex data design that I attempted to implement in *R:BASE System V*, using only the various Express utilities included. Since presenting the database design to you last month, I am sorry to report that *R:BASE* has pretty much failed at automating the programming tasks involved for data entry, although its report writer must be rated as one of the best in the business. In addition, the *R:BASE* RULES facility, which offered some hope of enforcing referential integrity, is not sufficiently enforced within *R:BASE* to satisfy this function.

Let it be noted that I am evaluating *R:BASE System V* in terms of its own aspirations and goals, as I perceive them, not in terms of a direct comparison with products such as *dBASE III+*, which has its own problems. My overall evaluation of *R:BASE* is that it can be used as an effective tool for database application development, but not nearly as easily as one might hope.

DATA ENTRY— R:BASE FORMS

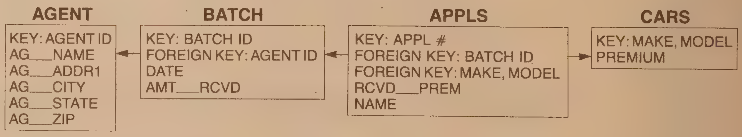
In the test database (see Figure), the task was to enter a batch of insurance applications from a single agent. *R:BASE* allows you to design a FORM for data entry (using the FORMS EXPRESS part of the product), with some flashy and potentially wonderful features. However, these features aren't quite what they should be yet.

The FORMS EXPRESS provides a facility for entering data in multi-table relationships, which appears to be just what we need. In order to enter a batch of data we need to:

1. Have the program assign a batch id equal to one more than the maximum of the existing batch ids.
2. Have the user enter an agent code, and verify that the agent exists. If the agent code exists, the agent's name should be displayed on the screen. If the agent code does not exist, then the user should be able to pick an agent code from a list, or to enter the agent's name and have the agent code entered automatically.
3. Have the user enter a remittance amount, which is the amount of the check sent by the agent.
4. Enter the data for individual applications one by one. This includes the name of the individual insuree, and also the make and model of the automobile. The make and model together should be treated like the agent code: if they are found in the CARS table, then the premium should be displayed on the screen. If not, then the user should have an opportunity to examine the list of cars that are in the database and find the appropriate one.
5. When all individual applications have been entered, the program should total up the premiums and compare the total to the amount of the check tendered by the agent. If the two amounts are different, an error message to the operator and further processing (like the backing out of the batch to a HOLD file) should occur.

So, how does *R:BASE System V* handle these tasks? The answer is that it can handle them, but not within the context of the FORMS EXPRESS.

FIGURE 1



Let's look at the steps one by one:

1. You cannot, within the FORMS EXPRESS, calculate the maximum existing batch id. There are several alternatives—I'll describe one. You can keep a separate table, which would have only one row, which would keep the value of the last batch id used. This works pretty well, although you must remember to increment this value after every batch is entered. This means also that after every batch is entered, the user must be forced to exit forms processing (which can be done) so that your little one line program can update the last batch id table, and then you can re-enter forms processing for the next batch. This is a somewhat significant overhead.

2. If the person doesn't know the agent id, it is very easy to write a little program that prompts him for part of the agent's name and then looks up the id. But, again, this cannot be done from within the data entry forms, and forces you into custom programming. On the other hand, if the agent id is found, it is very easy for *R:BASE* to display the agent name on the screen automatically, without any coding.

3. A field for remittance amount is easily set up on the form. No problem here.

4. The look-ups into the CARS table are subject to the same considerations as the look-up into the AGENTS table: i.e., if the user can enter a make and model combination that is in the table, everything is hunky-dory, but they (and you, as the programmer) are in trouble if they don't know it.

5. The checking of the amounts is an easy two-line program to write in *R:BASE*, and the extraction of all applications in a given batch into an auxiliary HOLD table is a one-line relational operation.

It may be possible to accomplish some of this from within FORMS EXPRESS, but, if so, I haven't been able to figure it out. The only examples that are included in the documentation are extremely simple, and barely reflect the range of real-world needs.

The conclusion about FORMS EXPRESS: fine for simple forms, but for the bullet-proof type of behavior that is required for most real-life applications, you will have to write your own programs that manage every line of the interaction. Just like *dBASE*.

VIEWS, REPORTS, AND AD-HOC INQUIRIES

In contrast to its data-entry facilities, *R:BASE System V* shines in the area of generating reports and satisfying ad-hoc inquiries. The fundamental facility that makes all of this easy is the **View.** This is a concept from formal relational theory which aims to glue the underlying tables together in a natural way, and to present a unified and sensible picture to the end user (the *dBASE* view concept is a radically distorted version of this). In *R:BASE*, you can create a view from the DEFINITION EXPRESS simply by moving the cursor to the tables that need to be joined and pressing Enter. (Unfortunately, changes to the structure of the underlying tables confuse the view mechanism and require deleting and then recreating the view. Only a few keystrokes, but it does take time to enter and exit the various modules, and it gets annoying).

At any rate, once a view has been created, then it is easy, even for the non-programmer, to satisfy ad-hoc inquiries using the PROMPT facility. This facility aids in the creation of all *R:BASE* commands, and is extremely well-designed.

Copyright ©1987 by Warren Sirota. All rights reserved. *Warren Sirota is a database consultant with experience in a wide range of languages. He also composes and programs conputer music. He lives in Oakland and can be reached at (415) 482-3979.*

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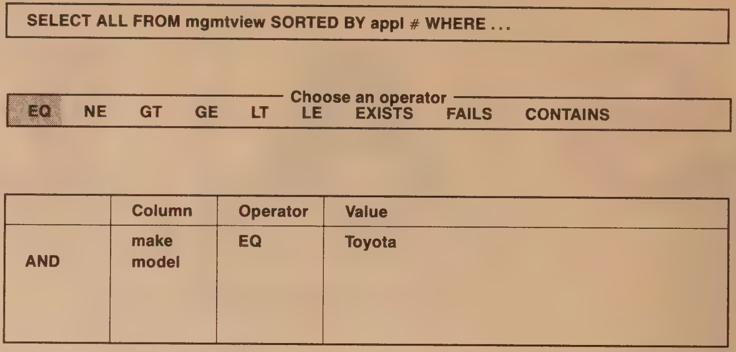
Figure 2 shows part of the process of a management inquiry into all applications for Toyota Corollas.



```
SELECT ALL FROM mgmtview SORTED BY appl # WHERE . . .
```

	Column	Operator	Value
AND	make model	EQ	Toyota

Figure 2. This is a screen printout from an inquiry screen in R:BASE's PROMPT mode. This screen is part of R:BASE, and required no coding to set up, except for the 5-minute operation of setting up the management view. The top area on the screen shows the actual syntax of the R:BASE SQL-like query, which is in the process of being built. None of these words have been typed in; rather, they have been chosen by prompts similar to the middle box in the figure, where the user is being asked to help complete the WHERE clause. The bottom box shows the WHERE clause up until now. All field names have been chosen from menus; none have to be remembered by the user.

The REPORTS EXPRESS part of *R:BASE* can also operate off views, and provides ten levels of sorting and subtotals (compared to *dBASE's* two levels). It is very easy to define complicated reports which look exactly the way you want. The only gripe I have is that you have to exit REPORTS EXPRESS in order to test a report, and then enter it again to make changes. This is more time-consuming than it should be.

MISCELLANEOUS

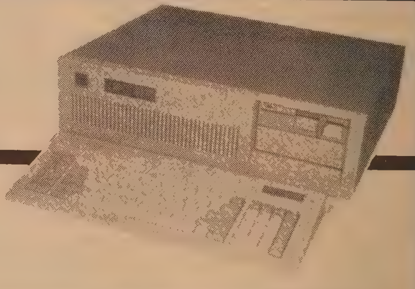
R:BASE System V contains an enhanced File Gateway, which is a fine utility that can read all sorts of files and put them into *R:BASE* table format (as well as export files). Translating *dBASE* files into *R:BASE*, for instance, is a snap. *R:BASE* also provides a high-precision CURRENCY data type, and a NOTE data type similar to the *dBASE* MEMO data type. The NOTE data type is not supported well, however, and its use is not advised except under limited circumstances (ditto for *dBASE* MEMO types). MicroRim should take a look at what *Clipper* does with its MEMOEDIT function for an example of how to handle this properly.

The RULES function of *R:BASE System V* looked promising at first. In the example database, for instance, I specified that every application in the APPL table had to have a batch id associated with it in the BATCH table. During data entry, this rule was enforced, as it should have been. However, it was still possible to delete all the rows in the BATCH table, even though this left many applications hanging, without so much as a whimper from *R:BASE*. So much for automatic referential integrity.

Another problem with *R:BASE* is that when you're using it in its simplest, unadorned mode (the R> prompt, which is equivalent to the *dBASE* dot prompt), error messages are nonexistent. If you issue a command with incorrect syntax, it doesn't tell you what's wrong. It simply gives you another R> prompt. This aspect of error handling has to be rated as poor.

CONCLUSION

Although the automation of data entry functions is still too simplistic to be useful, you can still program them by hand, which is no worse than what any other system gives you. In addition, *R:BASE System V* provides the end user with a superior report generator and ad-hoc inquiry facilities, and excellent PROMPTing through all of its command syntax. ☐



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Getting Wired

By Newt Pippin

So many people in the Macintosh community are busy boasting about their connections to Apple and their inside knowledge of the forthcoming new machines that I thought I'd skip that subject entirely. Instead, I'd like to tell you about another type of connection, one between Macs.

The link is PhoneNet, a cabling system from Farallon Computing in Berkeley (415/849-2331) that you use to hook up Macintoshes and their supporting peripherals running under AppleTalk. Cabling systems are pretty tame stuff, but I like this one because it can save me a lot of money, and it lets me keep more control of my actual desktop.

Essentially, PhoneNet turns the normal AppleTalk shielded-cable system into a connection grid made up of ordinary 2-wire telephone cable. In fact, the cables use standard phone hardware both for the cable and for the plugs and sockets.

Like AppleTalk, PhoneNet uses a small junction box at each device to make the link between device and network. The PhoneNet junctions cost the same as Apple's AppleTalk variety ($49 each), but from there on you can use low-cost two-wire cable.

You can, in fact, use a lot of cable—PhoneNet is spec'd for up to 3,000 feet between connection nodes, which is three times as far as AppleTalk allows. You can also connect PhoneNet as a star, bus, or serial string of machines (meaning connected to a common point, connected to points along a common cable, or connected each one to the next).

Essentially PhoneNet turns the normal AppleTalk shielded-cable system into a connection grid made up of ordinary 2-wire telephone cable. The cables use standard phone hardware both for the cable and for the plugs and sockets.

If you have four-wire phone cabling with only two wires in use—common in houses and offices wired from about 1960 on that have only one telephone number—you can even use your existing phone wiring. Normally, single line telephone connections ("RJ11" types) are connected up to use the center two conductors, so the PhoneNet connectors default to the two outside wires.

If you have two-line service using a single jack ("RJ14" style), the outside pair is in use and you'll have to provide PhoneNet with its own dedicated cable.

What I like best about the system is that it lets me keep the LaserWriter in one place, yet move the Mac around from room to room as needed. If there's an unused telephone link, I use that to get back to the LaserWriter. If not, I can quickly run a line down the hall with one of those retractable 50-foot phone extensions.

I haven't had any problems at all with PhoneNet, and I assume that its long-term reliability should be comparable to AppleTalk's. Farallon only guarantees the connectors at the current 230 kilobit per second AppleTalk data rate, but they do have a high speed model, in case you want to be prepared for the future (or, apparently, if you're using AppleTalk to connect PCs running Centram System's *TOPS*).

The short installation guide could have been a little more complete (there's no mention, for example, of the possibility that you might have two-line phone service with RJ14 jacks), but it's sufficient for the ordinary situation. Farallon chose to make the guide a tiny 2″ × 3″ to fit in the same box as the connectors, so you'll probably need to staple it to a larger sheet of paper if you don't want it to disappear in the normal flow of an office.

On the other hand, if you have any special problems, you'll almost certainly be able to get help from Farallon. The firm is made up almost entirely of Mac addicts who originally played active roles in the Berkeley Macintosh User Group (BMUG), and they're eager to be of service. On the other hand, there are times when it's clear that you're dealing with current or recent university students, so not everything proceeds on a direct, business-like path.

Overall, barring the very remote possibility that Apple can make its boxes perform some hitherto unrevealed function that PhoneNet cannot, I don't see any reason for buying the AppleTalk connectors—PhoneNet is more flexible, just as cheap, easier to wire, and quicker to set up.

At the recent Seybold Conference on Desktop Communication, Farallon also showed some further PhoneNet products for large installations, as well as some software for network management and configuration. I haven't had a look at them yet, but if you're thinking large network there's apparently an available growth path using the same technology.

GET YOUR MAC BACK FASTER

A Mac-to-LaserWriter connection, whether using Apple's wiring or PhoneNet, often seems to run at a rather lackadaisical pace, but that rarely is the fault of the network. Rather, in most cases the LaserWriter holds up transmission as it runs through the internal PostScript processing needed to translate output description to dot patterns. For long documents, the delay can quickly mount up past minutes into hours.

SuperSpool captures your output while it's still in the native Macintosh QuickDraw format, rather than waiting for the relatively time-consuming translation from QuickDraw to PostScript.

If you have a spooler program, though, you don't have to wait for all that computation to start work with your Macintosh again. The spooler stores the data destined for the printer in memory or on disk, and then feeds it out slowly while allowing you to use your Mac for other tasks.

Spoolers are another fairly tame item, distinguished principally by the quality of their user interface. Because of the way the Mac normally readies files for LaserWriter printing, they've still needed a fair amount of time to capture the document that you intend to print later—until now.

I saw a demonstration of an almost-release version of SuperMac Software's new *Laser Super Spool*, and it has a decided new twist that makes it run considerably faster.

The *Super Spool* captures your output while it's still in the native Macintosh QuickDraw format, rather than waiting for the relatively time-consuming translation from QuickDraw to PostScript. Then, you get the use of your Mac back, the translation as well as the transmission takes place invisibly in the background, and your LaserWriter is just as happy.

What happens, I asked, if you run an application such as *PageMaker*, which doesn't use the Apple QuickDraw-to-Macintosh conversion system? Ah, they said, then *Super Spool* saves the output in PostScript form, and does no better, but no worse, than everyone else. (SuperMac Technology, 415/964-8884.) ☐

Newt Pippin started out with a 128K Macintosh when Apple first introduced the product and has worked his way up to a Macintosh Plus hooked up to a LaserWriter. He works for a communications company in the San Jose, CA area.

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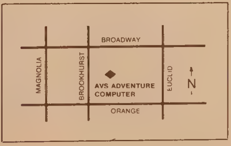

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What's New At CES

By Matthew Leeds

Commodore's own IBM clone, the PC-10.

Boy, have I got a lot to tell you about. Last month I spent four days in Las Vegas at the Consumer Electronics Show, the largest collection of electronic toys under one roof in the USA — audio, video, TVs, and all the supporting products as well. Every year Commodore takes a big booth, shows off their new products, and invites manufacturers to show off their new products as well; this year there were a lot of important announcements.

The PC10, which has been selling well in Europe and Canada, was officially shown to the public as a product for the USA marketplace. It comes standard with serial and parallel ports, a monocolor card (IBM, CGA, MDA, Hercules and Planatronics support), single floppy drive, 8088 CPU running at 4.77 MHz, MS-DOS 3.2, XT compatible BIOS, XT type keyboard, GW BASIC, and five expansion slots. Two versions are available: the PC10-1 has one floppy and 512K of RAM, the PC10-2 has two floppies and 640K of RAM. There is room in each for full or half height hard disk drives.

Another Commodore computer that has been sold overseas is the 128D. It looks like a 128 stuffed into an Amiga case, with a single built-in disk drive, detached keyboard, and a smaller footprint. Best of all, there is only a single cable that needs to be on the front of your desk. Shipping is planned to start in April.

Other goodies include a finalized 1581 3.5 inch disk drive with 800K of storage, a 256K RAM expansion unit for the C64 that solves the power supply problems found when using the 1750 unit on a C64 (bundled with two software programs: a RAM disk driver for native mode, and one for GEOS applications), and a proportional mouse (with optional joystick emulation mode) for use with applications that can take advantage of that capability, such as GEOS.

Speaking of GEOS, the folks at Berkeley Softworks look to be doing very well. Their booth at CES was huge, two stories high. Working versions of *geoCalc* and *geoBase* were shown, as was an eighty column version of GEOS for the 128. It seems that Commodore and Berkeley Softworks put their heads together and found a way to overcome the problems earlier design attempts had found to surpass the video display bottleneck. No release date as yet, but most likely second quarter.

Electronic Arts showed *Earl Weaver Baseball* on the Amiga. This game is headed for stardom. Split screen displays, artificial intelligence coaching, instant replays, customized ballparks, full stats for data junkies, digitized sounds — the list goes on. Also shown was a beta version of the new *Deluxe Video* with the overscan border eliminated and significantly smoother animation. Finally, *Deluxe Music* is now shipping.

Creative Microsystems Inc. showed the Kickstart Eliminator. This is a set of EPROMS, sockets, PALs, jumpers and software — not for the faint of heart. Once it's installed, something of an undertaking, your Amiga will no longer ask for a Kickstart disk on powerup. It will ask for the Workbench instead, reducing the time you must wait to use your machine. Using the software included with the package, you are able to use the WCS RAMs as memory as well, adding 256K of fast RAM to the system. You must install this yourself or find a dealer or friend to do it for you; it will require some soldering and chip handling. Creative Microsystems has promised to send me a kit, and I will review it as soon as it arrives and I get it installed.

Prism Computer Graphics is finishing up their SMPTE time code reader for the Amiga. It will let you read SMPTE code from source, and comes with software that will let you create and edit decision lists off-line. Drop or Non-drop frame time code can be manipulated. You can select in and out points visually. Support for RS232 transfers of EDLs to other computers or CMXs is supplied. Other software supplied will log starting and end points of edits from edited tape, test for time code continuity, and display time code on the screen.

Matthew Leeds is a writer/photographer specializing in high technology. He has been involved with Commodore computers since 1983. *Copyright © 1987 by Matthew Leeds. All rights reserved.*

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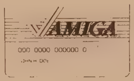

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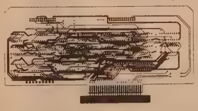

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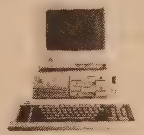

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The Commodore 128D shows improvements in design over the C128.

In the 64/128 world, Simon & Schuster showed the 1987 version of J.K. Lasser's *Your Income Tax* program, a timely release which is reputed to walk you step-by-step through the process of deciding which forms to file, and what information to enter; it lets you try out various what-if projections. On-line help screens, an on-screen calculator, and windowing make the whole task easier.

Microcube Corp has one of the most vertical niche products I've ever seen. It's also one of the most interesting. They market joysticks designed as flight controllers for playing *Flight Simulator*. The ATC version is for the 64/128 and offers control over the flaps, guns, brakes, throttle, rudder and ailerons, and elevators. The Amiga version adds radar, view mode, landing gear, bombs, mags, radio, transponder, lights and other controls. The joystick can be put into self-centering mode, and can look like a mouse for use with other applications where there is no room to roll a mouse around. Hooks for applications programmers are also provided.

Microsoft Press was kind enough to give me a copy of *The Amiga: Images, Sounds, And Animation On The Commodore Amiga*. This book wins my award for the most attractive cover of '86. It also contains some of the best explanations of how the Amiga handles graphics and sound I've read. Programming examples in AmigaBASIC are provided to handle BOBs, sprites, sounds, windows, and animation. If you want to understand some of what goes on inside the case, and/or are interested in programming in AmigaBASIC, I recommend this book.

Infinity Software has introduced *Grand Slam Tennis* for the Amiga. I must tell you I'm biased in favor of this game because one of the programmers is a friend. So all I'll say is that it is one of the first games that makes good use of the mouse, has great animations, excellent digitized sounds, enough levels to keep you challenged, and comes in a very attractive package.

There were lots of other interesting items around. Tim Jenison of NewTek showed beta versions of his upgrade software for the DigiView; Anakin Research showed off the Easyl; Karen Bayless demoed a beta version of *ProWrite;* the Sidecar (with FCC passed sticker) was shown; Mimetics had a full-blown sound studio (or so it seemed with all the gear); Liquid Light displayed their film recorder; Byte by Byte showed the TIC clock/calendar; Genlock was once again demoed; as was the Live! frame grabber with new software capabilities. A good time was had by all.

Two new Amigas were shown upstairs to a few selected developers, press, manufacturers, friends and gate crashers. I'll cover them soon enough, but in the meantime I suggest you check out the new issues of *AmigaWorld* and *Byte* magazines for advanced looks. Pluses and minuses abound in the designs, but they should insure a financially secure future for Commodore. ☐

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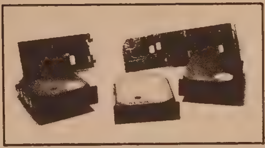

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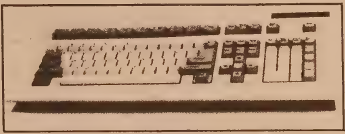

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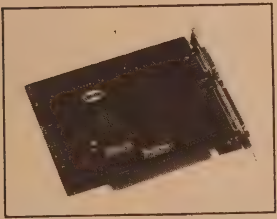

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ATARI ST

Religious Wars Revisited, Or,

Electronic Arts Sees The Atari Light

By Helmi Kobler

Sometime in 1982, a Silicon Valley entrepreneur named Trip Hawkins founded a software company whose name would become synonymous with creativity, innovation, professionalism and a whole bunch of other positive qualities. Electronic Arts, as the company was called, laid the foundations of that reputation on some of truly fantastic Atari 8-bit home and entertainment software: *Pinball Construction Set, M.U.L.E., Archon, Hard Hat Mack* and *Music Construction Set* were early titles that won accolades from just about every user, retailer and publication around. Consequently, EA suddenly found itself the darling of the Atari world.

Alas, the honeymoon was soon over. Before long, as Atari began to stumble under the Warner Communications administration, Electronic Arts moved much of its energies into other machines, especially the Commodore 64. New EA C64 titles began to proliferate, and the company had no plans for future Atari versions. Some Atari folks, feeling betrayed and abandoned, developed a bitter sense of resentment.

Many of those 8-bit users eventually migrated to the ST and began to hope that Electronic Arts would offer a full line of software for the new machine. The STs had been fairly well received; they offered 16-bit technology, lots of memory and color—all in all, a bright prospect for future EA products.

But then came the two page, full color "Why Electronic Arts Is Committed To The Amiga" ads. They made their first appearance in the premiere issue of *AmigaWorld*, trumpeting the software Amiga users could look forward to: *One On One, Archon, Deluxe Video Construction Set, Arcticfox, Marble Madness* and more—enough to make your mouth water. But what was there for the Atari ST user? We were promised *Financial Cookbook*, a product that seemed to come and go all at once, and *Marble Madness*, which has not materialized to this day. The general consensus among disgruntled users was that Electronic Arts had something or other against the ST.

But while EA may have been cool to the ST before, it's rapidly warming up now. Several titles for the ST have popped up over recent months, and a lot more are on the way. While some of these future releases will be original Electronic Arts works such as *Arcticfox*, the majority of them will be coming from the company's "Affiliated Labels" department. Affiliated Labels works with what are usually small, independent software firms to create products later marketed by Electronic Arts. Origin Systems' *Ultima IV*, Interstel's *Star Fleet 1* and *Chessmaster 2000* by Software Toolworks are such products that are now available for the ST, or soon will be. Other titles include *Ogre, AutoDuel, Ultima III, New Technology Coloring Book, Software Golden Oldies* and *Quizam*, plus more that are, unfortunately, "off the record" for now.

I visited EA's San Mateo headquarters and found (along with a remarkable absence of Fiends Incarnate) that the company is hard at work on ST software. They have STs on the premises, are working on software in-house and are also bringing to market a wave of Affiliated Labels titles. The folks at EA, actually, looked like a group that really care for their work and love what they're doing. So write them, call them. Tell EA you're glad to see it's supporting the ST and that you'd like to see even more of its software. (I have to admit that the Amiga *Marble Madness* is pretty hot. I wouldn't mind an ST version of that and a few others. . . .) Electronic Arts can be contacted at 1820 Gateway Drive, San Mateo, CA 94404. Call (415) 572-ARTS for Customer Service.

ATARI ON GENIE

In other news, Atari has been making efforts to expand its rapport with Atari computer users nationally. In early February, it became the sponsor of the Atari RoundTable on GEnie, an inexpensive on-line service owned by General Electric.

Atari has always been fairly active in the user community; it's got a User Group Coordinator on staff, publishes the *Atari Explorer* magazine and runs a five-line bulletin board system that receives over 12,000 calls a month. But attaching itself to the GEnie service lets Atari get involved with more users nationwide. The company now comanages two existing on-line conferences for STs and 8-bits, and also holds weekly conferences with Atari staff and software developers.

Atari premiered the GEnie effort with Sam Tramiel answering users' questions on a live on-line conference. When I got the press release announcing the event, I thought it sounded like a great idea and an interesting topic for this column. I figured I'd get the latest ST developments from the boss himself.

That's not exactly what happened. Evidently neither Atari nor GEnie expected the overwhelming response. Picture 100 people speaking on a phone line simultaneously, except that they're actually typing, and you've got an idea of the situation on that conference. There seemed to be no organization; questions poured in on a variety of topics at once while Sam and staff tried to answer what they could.

There were also some technical difficulties that marred the conference. GEnie seemed to "forget" a few people taking part in the conference, ignoring their input into the discussion and eventually forcing them to disconnect and call right back. I must have dialed in a dozen times. When the GEnie people finally got things under control an hour and a half later, it turned out that Sam had another appointment and would not be able to answer more questions.

In spite of these initial difficulties, though, if you'd like to get closer to the ST community, GEnie would be a good place to do it. Other users, developers and now Atari staff can be found on-line, not to mention a treasure trove of public domain software. If you'd like to sign up, call 1-800/638-8369.

EVEN MORE NEW SOFTWARE

A lot of good stuff is coming in now, Soft Logik's *Publishing Partner* and Aegis Development's *Aegis Animator* being two of the biggies. These both look very professional, and I hope they'll be setting the standards for future ST products. I'll be talking about them in next month's column.

In the meantime, though, MichTron (313/334-5700), perhaps the most prolific publisher of ST software, has released *Karate Kid II*, a martial arts game based on the Columbia Pictures film of the same title. As you might have guessed, it consists of a lot of kicking, punching, jumping and "Hiyiah"-ing, all done with lots of colors and realistic animation. You even get the movie's "Glory Of Love" theme song and bonus rounds featuring ice chopping (as opposed to bricks or wood) and the delicate art of chopstick fly-catching. My main complaint is that it's way too short. You can fight a maximum of five opponents in the game, which makes it easy to lose interest once they've been defeated. A two-player mode is included, though, which might give it a longer life if you've got another person around. *Karate Kid II* retails for $39.95. ☐

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106.

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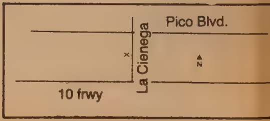

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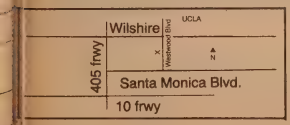

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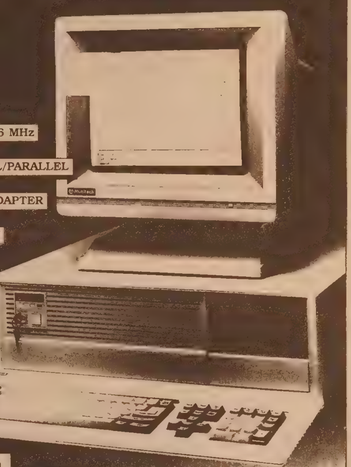

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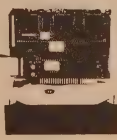

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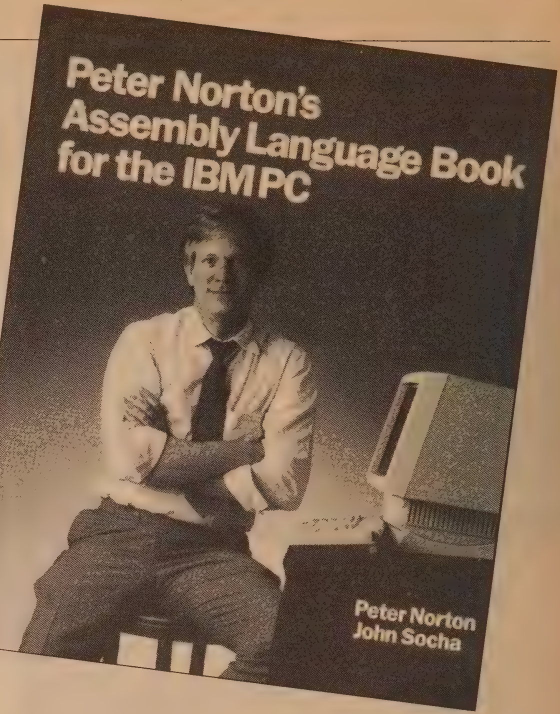

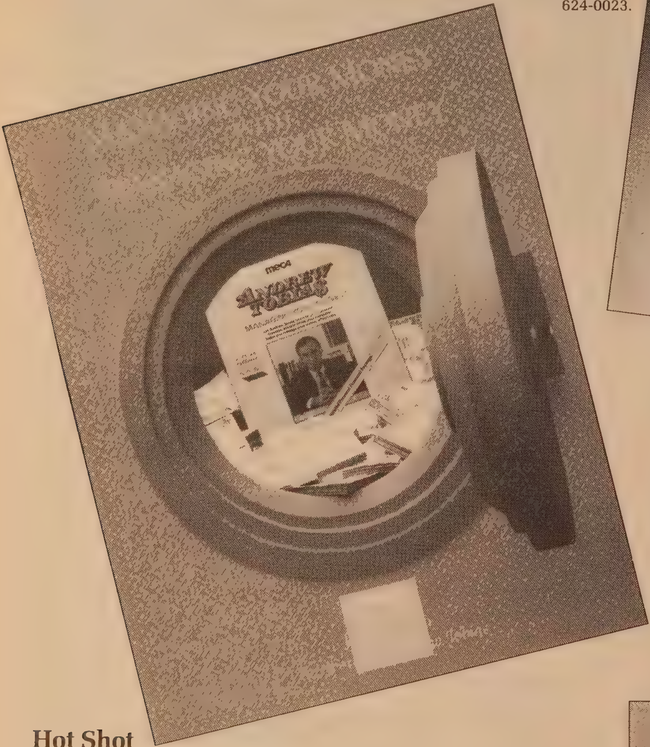

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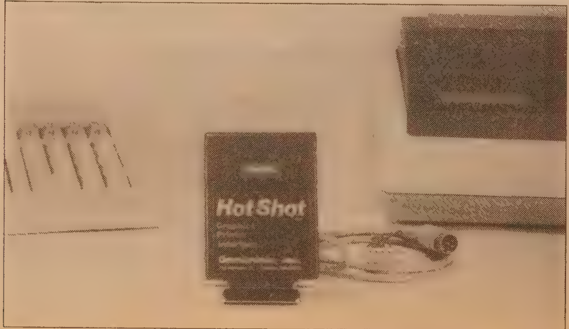
Hot Shot

HOT SHOT Graphics Printer Interface for Commodore computers is now available from Omnitronix, Inc. It features an empty socket to plug in an 8K RAM chip to help speed text and graphics printing as well as a DIP switch for selecting printer type, linefeeds, device number, and settings for default operation in Transparent, Emulation, ASCII and Enhance Features mode. For more details on HOT SHOT, contact Omnitronix, Inc., 760 Harrison St., Seattle, WA 98109, (206) 624-4985.



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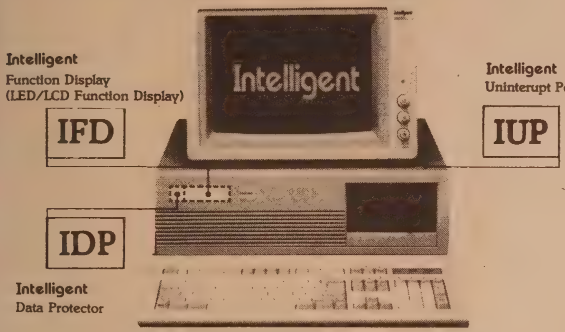
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WORD PROCESSORS

WordPerfect Library

Published by: *WordPerfect Corporation (formerly SSI)*
For: *IBM PC, XT, or AT with minimum 384K RAM, DOS 2.0 or later; hard disk recommended.*
Price: *$129*
Reviewed by: *Jim Switzer*

WordPerfect Library is a collection of desktop utility programs, program editor, and a DOS shell designed to help you get the most out of your *WordPerfect* word processor and *MathPlan* spreadsheet. If you don't have either of these products, don't stop reading—*WordPerfect Library* can work with any PC program.

WordPerfect Library consists of seven separate programs integrated into a "shell" concept: NoteBook, Calendar, Program Editor, Shell, Calculator, Macro Editor, and File Manager.

The NoteBook program is designed to work with the *WordPerfect* word processor as a merge file manager. If you don't have *WordPerfect*, it's still useful. The NoteBook operates much like a database manager and offers auto-dialer capabilities with your Hayes modem.

The Calendar allows you to keep track of your appointments and "to do" lists apart from each other. It also allows you to post memos to yourself for any given date. What's more, the program identifies "hot" days with a different symbol for appointments, "to do" lists, and memos. The Calendar will allow any dates from 1600 to 20000 and any time of day for appointments.

The Program Editor allows you to edit text and program files as easily as you would edit a file through a word processor. The Shell integrates the WordPerfect products under a menu system which automatically partitions memory to allow multiple programs to remain resident at the same time. This menu system allows you to also access any other of your PC programs from a central location. A "clipboard" is available for transferring data between WordPerfect products.

The Calculator will perform calculations for math, trigonometry, financial, statistical, and programming applications. An on-screen paper tape may be printed, captured to disk, or placed on the "clipboard" for later use. The Macro Editor allows you to edit any macros that have been created by any of the WordPerfect products. The File Manager gives you a more "sophisticated" way of viewing the files within your system, complete with rename, copy, and delete functions. Other features that are available across the entire product are the ability to modify default color settings, add/change/delete menu entries, and support for the Lotus/Intel/Microsoft expanded memory (up to eight megabytes). Another interesting feature is that none of the Library programs requires more than 90K (by itself) to run, and all are able to run as stand-alone programs.

The Calendar program is the best desktop calendar that I have seen—far superior to *SideKick* or *Windows*. The Calculator allows you to switch between the supported calculation functions quickly and easily. The on screen paper tape is great if you're balancing your checkbook or doing your taxes. When you need it, just print it out. The File Manager works like most of its competitors, such as *1 dir*. It will display a two column directory of files with the ability to scroll up and down with a highlighted pointer bar. The commands available are displayed on the bottom of the screen. The NoteBook works similarly to most "flat-file" database systems. Its intended use is to help maintain merge files for the *WordPerfect* word processor, but can be used to store names and addresses, members of committees, etc. The auto-dialer function is available by pressing the F4 function key, with the use of a Hayes (or compatible) modem. Each of the two editors works like the *WordPerfect* word processing package. Extensive use is made of the IBM's function keys for editing purposes. The product performs very well, especially when switching from application to application.

WordPerfect Library is very easy to use. The heart of the program is an application menu that comes to you set up for the *WordPerfect* word processor, the WordPerfect *MathPlan* spreadsheet, the Library programs themselves, and a video game called Beasts. You have the ability to add up to ten other PC programs to the menu (twelve if you do not have either *WordPerfect* or *MathPlan*). This is done by selecting the Setup command from the command line at the bottom of the screen. You can move any of the applications to other letters, edit the existing application "start up" information, or delete any of the applications from the menu.

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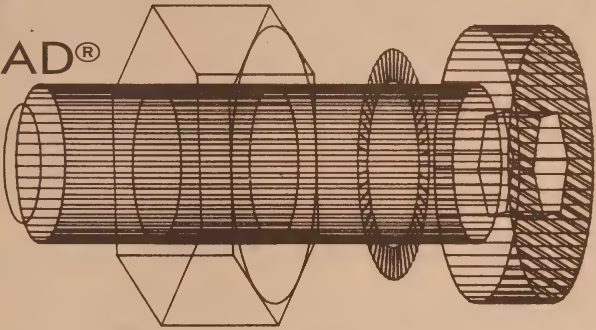

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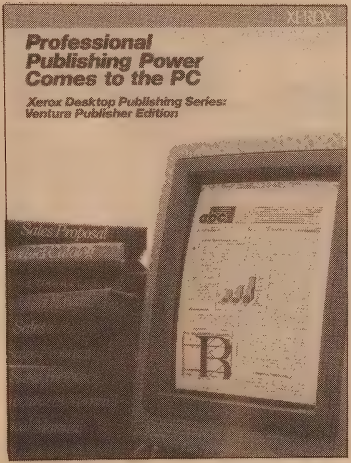

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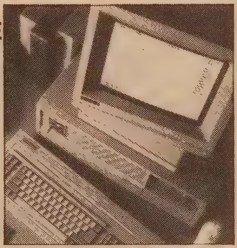

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From this screen you also have the ability to modify the default color selections for the menu itself. Back on the main menu, to select an application just press the letter that is associated with it.

The Library Shell program operates in the background while taking up only 25K of memory. It will allow you to go directly to another application (if *WordPerfect* product compatible) by pressing ALT, SHIFT, and the menu selection key at the same time. This comes in handy while you're editing and need to record an appointment in the calendar. The Calculator program operates just as easily. Once in the program, you may select the type of calculations that you will be dealing with by pressing the proper function key. The F8 key, for example, will let you process financial calculations such as Present Value, Future Value of an Annuity, calculate payments, etc. The whole Library product is just as easy to work with.

WordPerfect Library has its share of problem errors like most packages this sophisticated. The NoteBook program looks for a particular file when started, can't find it, and displays an error telling you that it couldn't find a file. It just doesn't tell you which one. Also, when printing your appointments, calculator tape, etc. the program doesn't seem to recognize when the printer is turned off. It doesn't give you an error, but just sits there. When you turn the printer on, it begins to print the request from the beginning as it should. Aside from these types of nuisance errors, the program functions beautifully.

The documentation consists of a 325 page, three ring binder/slide cover setup. This manual is broken out into "mini-manuals", one for each of the programs available in the Library. Each has its own Table of Contents, Reference section, and Index. There is at least one sample exercise provided in each of these to help you understand how that particular function works.

The *WordPerfect Library* is for use on the IBM PC, XT, or AT computers with a minimum of 384K RAM. No mention is made by WordPerfect as to whether or not this product will run on any of the compatibles available on the market. This product was tested on an IBM PC/XT with 640K RAM and an Epson MX-80 printer w/Graftrax. If you have any questions regarding whether or not it will run on your equipment, contact your local computer dealer or the WordPerfect Corporation at the number below.

The *WordPerfect Library* is a terrific product. Everyone should have one. The ability to switch back and forth between applications is what makes it so great. Even if you don't (currently) have *WordPerfect* or *MathPlan*, the programs in the Library package are by far the best desktop utilities that I have seen. I recommend this product to everyone. (WordPerfect Corporation, 800/321-5906.)

BOOKS

Command Performance: AppleWorks

By: *Charles Rubin*
Published by: *Microsoft Press (1986) softcover, 396 pages*
List Price: *$18.95*
Reviewed by: *Mike Markowitz*

AppleWorks has perfectly good documentation: a thick manual, an extensive tutorial, a quick reference card, even built-in Help screens. Nevertheless, there is a ready market for books that purport to explain the program. After all, most of us never read the manual, and even if we do, we don't always trust it.

Command Performance: AppleWorks is billed as a "desktop dictionary and cross-reference guide." It is organized alphabetically, with entries covering every command and major program feature. The design of the book uses color (light blue) effectively, and small icons are used to tag each entry as pertaining to the Word Processor, the Database or the Spreadsheet. Screen illustrations are used lavishly as examples.

There is a very good concise summary of ProDOS (the operating system under which *AppleWorks* runs), an entry on using the program on a hard disk, and an entry called "Tips and Tricks." This is a book to keep beside the computer for help in emergencies, but it is also a book for casual browsing. It is a good way to learn the intricacies of a product that is more than just a program—it's a way of life.

Charles Rubin has written a previous book on *AppleWorks* and is a frequent contributor to microcomputer magazines. He is a careful, meticulous writer; this is not a chatty or humorous book.

The descriptions are up-to-date for Version 1.3 of *AppleWorks*. There are no specific references to earlier versions. The recent release of Version 2.0 should not make the information obsolete, however.

There are no references to non-Apple hardware or software enhancement products for *AppleWorks*, perhaps because these are beyond the scope of a standard reference book.

Most users will have no need to spend $18.95 on supplemental documentation for a program that is so easy to learn and use. Unsure beginners will find great comfort here, and even the *AppleWorks* hacker may learn some new tricks.

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GAMES

Handwriting Analyst

By: *Garth Michaels, Marilyn Maze and Dorothy Hodos*
Published by: *Career Information & Software Associates (1986)*
For: *IBM PC and compatibles (128K, DOS 2.0 or higher)*
List Price: *$50*
Reviewed by: *Mike Markowitz*

The belief that a person's handwriting reflects his or her personality is widespread. Graphology, the study of handwriting, aspires to being considered a science, and the testimony of expert graphologists is often accepted in court when the authenticity of documents is in question.

Can the expert knowledge of a handwriting analyst be reduced to a series of multiple choice questions that drive the output of a computer program?

The authors of *Handwriting Analyst* think so. The package is billed as a sort of party game to amaze and delight your friends, but the method embodied in the program reflects over a hundred years of graphological theory and research.

The program menu offers the option of a quickie analysis based on a signature alone, or a full analysis based on a sample of text (such as a handwritten letter or note). The output may be either a Quick Report or a Detailed Report. Up to 20 analyses can be saved on the program disk, which is not copy-protected. The printed reports cover six "factors": physical and material drives, emotional characteristics, intellectual style, personality traits, social behavior and vocational implications.

To generate this multidimensional profile, *Handwriting Analyst* asks you 63 multiple-choice questions. Is the slant of the writing mild, average, above average, extreme or variable? Is the spacing between words wide, balanced or crowded? Is the legibility high, moderate or low? Are loops tall or short? Is the crossbar of the "t" high, low or in the middle? Are capital letters elaborately flourished, plain or printed. A 72-page manual gives clear graphic examples of all the esoteric patterns and variations the graphologist uses to read the character behind the scrawl.

It takes about a half hour to work through the questions using a text sample, and rather less time for a signature. I tried out the program on scraps of writing from most of the people I know well (a mercifully small sample). The results were generally consistent with my prejudices, but nothing like the stunning shock of recognition we often get from a really good psychological test like the Myers-Briggs.

The output reports are compiled from a library of about 600 statements, which are linked in complex ways to the handwriting questions. Six hundred items is not much of a range to capture the diversity of five billion human beings (or at least the two billion or so who can write the Roman alphabet).

The program manual includes an excellent Glossary of graphological terms, a brief history and bibliography. Samples of historic and celebrity autographs are included along with a sample of Ronald Reagan's handwriting (he crosses his t's right at the top, whatever that means).

The program is packaged in a slim cardboard folder. It runs smoothly on every PC clone I tried. It is great fun, but should not be taken seriously as a psychometric instrument. (CIASA, 2017 Cedar Street, Berkeley, California 94709, 415/524-4976.)

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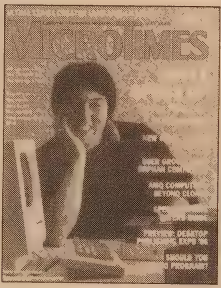

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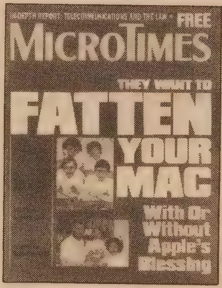

FOR THE "MAC AT WORK" USER
Since California is the Macintosh's home base, the MicroTimes Silicon Valley office will provide the latest industry news and rumors, user group reports, bulletin board listings, and up to the minute calendar of events for California's Macintosh users!

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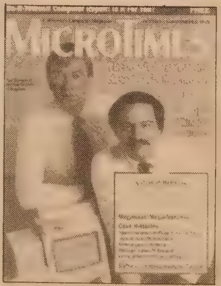

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BOOKS

My First Book About Computers
My First Computer Dictionary

By: *Luca Novelli*
Published by: *Microsoft Press (1986) hardcover, 64p. for ages 10 to 12*
List Price: *$9.95 each*
Reviewed by: *Mike Markowitz*

Computer books for kids are usually disappointing (at least to this semi-adult reviewer). They are usually too general, when learners want specific facts. They are often patronizing, underestimating the ability of young minds to master complexity. Hey! every kid is able to master her own native natural language, which is something no computer program has ever done. If your kid wants to know about computers, don't buy him a book. Buy him a computer.

Nevertheless, when Microsoft Press decides to bring out a line of computer books for kids, this is something worthy of notice, because Microsoft doesn't publish junk. What makes these titles even more remarkable is that they are translations from Italian. Being of Italian origin, as you might expect,

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Dot matrix printer with near letter quality printing at a home budget price. 100cps draft speed, 80 column.
List $299 *Special* $185

OKIDATA

182P, 120 cps, 80 Col., Parallel	$279
192+ 160 cps, 80 col. Parallel	$389
193+ 160 cps, 136 col. Parallel.	$595
293E, 240cps, 136 col	$Call
294, 400cps, 136 col	$Call
2410P, 350 cps, 136 col. Parallel	$1895

IBM

IBM ProPrinter – 200cps, 80 col	$385
Proprinter XL – above but 132 c	$599
IBM QuietWriter II - 60cps, 132	$1,295

TOSHIBA

P321 – 180cps, 24-pin head.	$475
P341 – 220cps, 24-pin head.	$799
P351 – 288cps, 24-pin head.	$999

DIABLO

Diablo 635.	$975
Diablo D80 IF	$2,250
Diablo 630 API, 40 cps daisywheel printer *Sale Price*	$1,250

CITIZEN

MSP-10 – 80 column.	$299
MSP-15 – 132 column	$399
MSP-20 – 80 column.	$389
MSP-25 – 132 column	$559
Premium 35 Daisywheel	$550

STAR GEMINI

SB-10, 24-pin, 80 column	$450

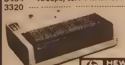
NEC

P-5 Printer, 132 colmn	$969
P5XL Color printe, 132 column	$1,085
P6 Printer, 216cps, 80 col	$499
P7 printer, 216cps, 132 column.	$699

GENICOM

High speed, heavy duty, 18-pin dot matrix printers for business use.

3404 – 400cps, serial interface	Call
3320	Call



HEWLETT PACKARD

H-P Thinkjet, 150 cps, 80 col..	$389
H-P Quietjet Plus, 132 col..	$635
H-P Laserjet	$2,289
H-P Laserjet Plus 300.	$2,899
H-P Laserjet 500	$3,750

BROTHER

M-1109 – 100cps, 25cps NLQ, 80 col. 2K buffer, dual interface.	$199
M-1509 – 180 cps, (45cps NLQ), 132 col., friction feed and the new push type pin-tractor so first form won't be wasted. IBM and Epson FX-100+ compatible. Very quiet operation. Dual interface	$385
Sheet Feeder SF-40 for M-1509.	Call
2024L – 160cps, 24-pin head letter quality dot matrix printer, 136 col. w/tractor, parallel	$845
TwinWriter – Two heads are better than one! 160cps dot matrix and 36 cps daisywheel combined into one printer. Parallel interface	$985
H-R-20 – Daisywheel Printer	$359
Optioanl keyboard for HR-20	$225
DM-40 – 160cps, 24-pin dot matrix, 136 col., with tractor, para	$899

FORTIS

Fortis DM-2010 – 200cps, 50cps NLQ, 80 colum, emulates Epson FX-286 and IBM graphics printer.	$355
Fortis DM-2015 – Similar to DM-2010 but 130 column	$469
Fortis DM-20 160 cps dot matrix, 136 col., NLQ mode, both parallel and serial interfaces.	$525
Fortis DX-25 – 25cps daisywheel, 132 column, 7K buffer, quiet operation, built-in parallel & serial.	$480
Fortis DH45 – Dual head printer, 160 cps dot matrix, 36 cps daisywheel, Epson, Diablo compatible	$985

PANASONIC

KX-P1091i – 160 cps, 80 col	$299
KX-P1592 – 270cps, 132 col	$469
KX-P1595 – 360cps, 132 col	$630
KX-P3151 – 22cps daisywheel	$445

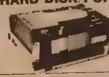
HARD DISK SALE!

New Low Prices!

- Half height internal hard disks for IBM-PC, XT and Compatibles.
- Boots directly from had disk
- Low power consumption
- Complete with controller, manual, cables & mounting hardware

20-MB	30-MB
Seagate 225	Seagate 238
$369	$449

HARD DISK FOR IBM-AT & COMPATIBLES



High performance full height hard disks.

30-MB Seagate 4038	$639
40-MB Seagate 4051 Complete w/software	$750
82-MB Seagate 4096 Complete w/software	$1,175

EVEREX

20-MB TEAC TAPE BACKUP

EVEREX 20-MB Internal Tape Back-Up for PC and XT, 4 MB/minute transfer rate. Complete w/control card, cable and manual	$575
EVEREX 60-MB Internal Tape Back-Up for AT. Complete with controller, cable and manual.	$885
EVEREX 60-MB External Tape Back-Up for At.	$995

IRWIN 10-MB TAPE BACKUP

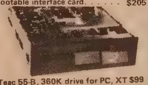
Internal half height unit. Direct connects to floppy controller card without taking up a slot. Complete w/$30 tape, software and instruction.	$325
20-MB Internal Tape back-Up	$449

HARD DISK CARDS

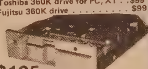
PLUS System, 10-MB, slim design	$595
MOUNTAIN, 20-MB	$750
Tandon 21-MB on a card	$475

IOMEGA BERNOULLI BOX

10+10-MB	$1,850
20+20-MB	$2,400
Non-bootable interface card	$150
Bootable interface card.	$205



Teac 55-B, 360K drive for PC, XT	$99
Panasonic Drive, 360K for PC, XT	$99
Toshiba 360K drive for PC, XT	$99
Fujitsu 360K drive	$99



$105 ea.
360K DRIVE FOR IBM-AT

AST

MULTI-FUNCTION MEMORY CARDS FOR PC/XT

New Low Prices!

SixPakPlus Cards

Memory installed on card	64K	256K	384K
with paralle, serial ports & clock	$165	$185	$195
above plus game port	$200	$220	$230

Advantage Card for IBM-AT	128K - $345	256K - $385	384K - $425
	512K - $465	1-MB - $515	1.5-MB - $545
PIGGYBACK	512K - $199	1-MB - $255	1.5-MB - $295
ADVANTAGE PREMIUM	512K – $535	1-MB – $585	
	512K piggyback – $299	1-MB Piggyback – $355	
RAMpage Card for IBM-PC/XT	256K - $279	2-MB - $525	
RAMpage Card for IBM-AT	512K - $445	2-MB - $615	

6-PAK PREMIUM CARDS with Parallel & Serial Ports

512K – $369 1-MB – $455
Daughter Board 512K – $195 1-MB – $395

MULTI-FUNCTION MEMORY CARD

Fully competible with IBM-PC and XT. Comes with Ram disk and print spooler software.

Memory installed on card	0K	256K	384K
w/parallel, serial, game ports, clock	$85	$125	$145

intel Above Boards

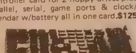
FOR PC/XT	64K	256K	1.5-MB
	$325	$399	$699
FOR AT	128K	512K	2-MB
	$395	$495	$795

INTERFACE CARDS

Hercules Color Card	$145
Hercules Graphics Card.	$189
Hercules Graphics-Plus Card	$199
Orchid EGA Color Card	$355
Orchid Turbo EGA Card	$579
Orchid Tiny Turbo 286 –	$485
Paradise Auto Switch EGA	$359
Quadram EGA+ Card.	$365
Sigma EGA Color Card.	$385
Vega EGA by Video-7	$365
Vega EGA Deluxe Card	$465
Enterprise EGA Color Card	$199
IRMA 3278/9 Emulator Card	$769
Taxan Gold Card	$385
Taxan EGA Color Card.	$285
Taxan 555 Hi res. color card.	$225
Paradise Color/Mono Card	$199
Sigma 400H Color for PGS SR-12	$455
Sigma 400L Color for Taxan 440/630/640 monitors	$455
Everex The Edge	$275
Everex Graphic Edge	$295
Tecmar Graphic Master.	$465
Tall Tree J-Diskette Controller to hook up 1.2 MB drives in PC/XT	$229
RS-232 Serial Card	$49
IBM Parallel & Serial Card for AT	$145
IBM Floppy Disk Controller.	$97
IBM Asyn Card	$85
IBM Monochrome/printer card	$199
IBM Colorgraphic Card.	$199
IBM Enhanced Color Card	$459

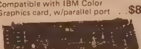
MINI I/O & FLOPPY CONTROLLER

Controller card for 2 floppy drives plus parallel, serial, game ports & clock/calendar w/battery all in one card. $125



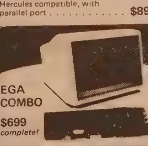
COLOR GRAPHICS CARD

Compatible with IBM Color Graphics card, w/parallel port $85

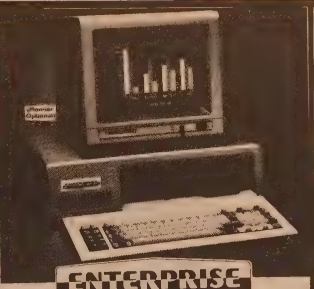


MONO GRAPHICS CARD

Hercules compatible, with parallel port $89



EGA COMBO
$699
complete!



ENTERPRISE

ENTERPRISE XT-Plus (4.77–8 MHZ)

- Fully IBM PC/XT Compatible
- Full one-year Warranty
- 640K on mother board
- 150-watt power supply
- 8 Expansion Slots
- AT style Keyboard w/LED
- Parallel Port included
- Serial Port included
- Game port included
- Clock/Calendar w/battery
- Floppy Disk Controller
- Compatible w/EGA Color Card & Net working systems
- Made in U.S.A.

$499	$699	$1099	$1195
640K memory No Drive	2-360K drives	2-360K and 20-MB Drives	2-360K and 30-MB drives

Monitor Optional

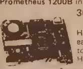
ENTERPRISE AT (6–8 MHZ)

- 640K – expandable to 1-MB
- Fully IBM AT compatible
- 80286 6/8 MHz microprocessor
- Controller for Floppy & Hard Disks
- 1.2-MB Floppy Drive
- AT-styled keyboard w/LED
- Full 1-year warranty

$1119	$1225	$1875	$1995
640K memory 1.2-MB Drive	1.2-MB and 360K drives	360K, 1.2-MB, 20-MB drives	360K, 1.2-MB, 30-MB drives

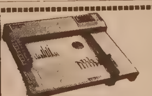
Modem Sale!

Hayes 300, externa, 300 baud	$145
Hayes 1200, external, 1200 baud	$365
Hayes 1200B, internal w/software	$339
Hayes 2400, external 2400 baud	$579
Hayes 2400B Internal Modem.	$545
Hayes Transient 1000	$325
AST Reach, 1200 baud *Special*	$199
Watson Voice/Data Modem	$375
Watson VIP	$275
Prometheus 1200 external	$295
Prometheus 1200B internal	$250



300/1200 BAUD MODEM

Half size modem easily fit into desk top or portable PC. Hayes compatible 5 yr. warranty. $125



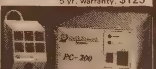
PLOTTER SALE

ROLAND

DXY-800 – 8-pen, hi-speed 180mm/sec. IBM compatible. 11x17" paper.	$Call
DXY-880 – Similar to 800, 8-pen, Hewlett Packard compatible.	$Call
DXY-980 – above but w/digital display & electro-static paper holder.	Call

HEWLETT PACKARD

7440A Color Pro – 8-pen	$975
7475A – 6-pen	$1,395
7550A – 8-pen	$2,995



DATASHIELD

Model 100, 6-plug surge & noise protector w/audio & Visual warning.	$65
PC 200, 200-watt backup power supply with built-in surge protector	$279
XT-300, above but 300-watt.	$365
Turbo-350, Super fast 350-watt.	$535
AT-500, above but 500-watt.	$625
AT-800, above but 800-watt.	$685

POWER SUPPLY

The finest and quietest power supplies in the market. Built-in EMI filter and short circuit/overload protection. External switch for 115/230 volt AC input. Can connect 4 drives. 1 year warranty.

150-Watt for PC/XT	$69
200-Watt for AT	$109

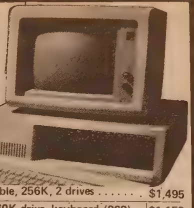
UNINTERRUPTIBLE POWER SUPPLY

Instant battery back-up system guards against black-out, brown-out and voltage surges. Back-up time 5–20 minutes with audio and visual warnings. Compact design. Special prices.

400-watt ..... $250 250-watt $150

IBM PC XT AT

SALE PRICES



All systems include keyboards and disk controllers. Monitors are available at big savings too.

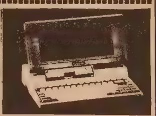
PC	IBM Convertible, 256K, 2 drives	$1,495
XT	256K, One 360K drive, keyboard (268)	$1,150
	256K, Two 360K drives, keyboard (278)	$1,295
	256K, Two 360K drives, 20-MB hard disk	$2,149
	256K, Two 360K drives, 30-MB hard disk.	$2,295
AT	256K, One 1.2-MB drive, keyboard.(68)	$2,395
	512K, 1.2-MB drive, 20-MB hard disk	$3,325
	512K, 1.2-MB drive, 30-MB hard disk (339)	$3,995

COMPAQ

Portable II, 256K 2 Drives	$2,495
Portable II, 640K, 1 dr. 20-MB	$3,295
DeskPro w/256K, 2 drives	$1,395
DeskPro-286, 256K, 1.2-MB dr.	$2,095
Despro 386, 1.2 & 40-MB Dr	$4,695
Despro 386, 1.2 & 70-MB Dr.	$5,495
Despro 386, 1.2 & 130-MB Dr.	$6,995

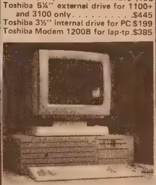
AT&T 6300 COMPUTER

640K memory, 1 floppy drive, serial & parallel ports, clock, Monochrome and RGB color ports, keyboard	$1,395
Above with two 360K drives	$1,495
640K memory, 1 floppy drive, 20-MB hard disk, serial, parallel ports, clock, mono & RGB ports, keyboard.	$1,795
AT&T Green Monitor	$225
D.O.S.	$65



TOSHIBA LAP-TOP

T1100-PLUS – Two 720K drives, LCD screen, battery operated	$1,650
T3100 – One 720K drive, 10-MB hard disk, 640K, amber plasma screen. It is a lap-top AT. 115 volt AC.	$3,195
Toshiba 5¼" external drive for 1100+ and 3100 only	$445
Toshiba 3½" internal drive for PC	$199
Toshiba Modem 1200B for lap-tp	$385



ITT EXTRA/286

10-MHz AT compatible, 640K, 1.2-MB drive also read & write 360K format. 8 expansion slots. Complete with EGA & keyboard $1,795

ITT amber or green monitor

MONITOR SALE

★★★★ RGB COLOR ★★★★

PGS HX12, 12" RGB color	$425
PGS HX-12E EGA Monitor	$499
PGS SR-12 – SuperRGB Color	$595
PGS SR-12P Color Monitor	$695
IBM RGB Color Monitor.	$545
IBM Enhanced RGB Monitor	$689
MultiTech 14" EGA monitor	$425
Mitsubishi XC-1410C, 14" EGA Color. Similar to Compaq EGA	$485
NEC Multi-sync RGB monitor	$599
Quimax PX-IV – 13" RGB, 720x240 line. Has green switch, tilt & swivel base	$445
SONY KV-1311CR – RGB Color Monitor, 680-line resolution, also a Trinitron Color TV with remote control . . . *A Fantastic Buy*	$495
SONY SPD1302, 13" EGA Multisyn monitor w/900-line resolution	$625
Tatung 1360 – 13" RGB monitor	$355
Tatung 1380 – 13" EGA monitor	$399
Taxan 720 RGB Monitor.	$379
Taxan 635 RGB Monitor.	$449
Taxan 650 RGB Monitor.	$515
Taxan 760 EGA Monitor.	$525
Taxan 770 Multisyn monitor	$575
Thompson 14" RGB Color monitor w/green & amber switch.	$325

★★★ GREEN SCREEN ★★★

IBM Monochrome, 12", 720-dot	$255
Quimax DM-14G – 13" green TTL, 750x350 resolution, titlt & swivel base included. 1 yr. warranty	$155
Samsung 12" TTL green monitor.	$95
Samsung SF39A7, 12" flat screen TTL Green monitor w/swivel base	$105
Taxan 115, 12" green composite	$125
Taxan 121, 12" green, 1000x360 dots, TTL monochrome	$145

★★★ AMBER SCREEN ★★★

Amdek 300A, 12" amber	$149
Amdek 310A, 12" amber	$169
Princeton MAX-12, 12" amber.	$169
Quimax DM-14A – 13" amber TTL, 750x350 resolution. Tilt & swivel base included. 1 yr warranty.	$159
Sansung 12" TTL amber monitor.	$99
Samsung SM12SFLAA7, 12" flat screen TTL Amber monitor w/base.	$109
Taxan 116. 12" amber composite	$129
Taxan 122, 12" amber, 1000x360 dots, TTL monochrome	$149

★★★ BLACK & WHITE ★★★

Roland MB-142, 14" reversible black & white TTL monochrome monitor w/super hi res. 720x350 dots.	$269

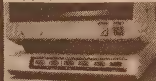
Canon PC

PERSONAL COPIERS

PC-10 Copier – Manual feed, compact size (\$795)	$499
PC-20 Copier – 100-sheet feeder, 1-19 copies. (\$1,095)	$679
PC-25 Copier – Make copies up to legal size from original as big as 10x14. Enlarge 120%, reduce 67% or 78%. (\$1,395)	$895
Black toner/drum cartridge	$75
Blue, brown, red cartridge	$80

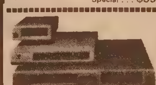
POWER DISTRIBUTOR

A power center with surge protector, noise EMI filter. 5 lighted rocker switches and a master switch. Built-in tilt & swivel monitor base. UL listed.
Super special $69



POWER SUPERVISOR

A power center with surge protector & noise EMI filter. It allows fingertip control of 5 different devices. UL approved
Special . . . $59



The POWER DIRECTORS

P-22 – A unique control center & surge protector w/4 lighted and a master switches for computer, printer and accessories. It also filters out EMI & RFI interferences	$79
P-2 – like P-22 but w/5 switches	$109
P-12 – Has 6 switches & clock	$149

All goods are brand new and guaranteed. All advertised prices already include a 2% cash discount for full payment by cashier's check, money order or cash. Personal or company checks must clear 3 weeks before we ship. Add 2% for credit card purchases. COD's are accepted for UPS shipments only and require 20% paid deposit and $3 COD fee. No COD's to Canada, Puerto Rico, FPO/APO or P.O. Boxes. Shipping & insurance charges: 3% (Min. $3) of total order value by UPS ground, 5% (Min. $5) by UPS Blue & Parcel Post. P.O.'s accepted from government agencies, Fortune 1000 firms and major institutions. Calif. buyers add sales tax. Prices subject to quantity available, correction or change without notice. You may call for the latest prices.

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FAX: 213-838-5301

they are stylish, colorful, technically accurate and informed by a warm, gentle sense of humor.

My First Book About Computers takes Wendy, Bill and their dog Field, on a quick tour through the history of computing, the operation of a microprocessor and the variety of computer applications in schools, business, industry and homes. "A computer is a machine. And like other machines, it was designed and created by people."

My First Computer Dictionary covers 60 main entries, with 144 different terms listed in the Index. The definitions include: ASCII, Binary, CPU, Digital, EPROM, Firmware, Input/Output, Kilobyte, LOGO, Operating System, PASCAL, RAM, Syntax, and many others.

Each entry on a computer language includes a short program or sample of code.

The books are illustrated in a whimsical cartoon style. They are ruggedly bound in glossy board covers, and should stand up to hard usage. They would be an excellent choice for any elementary school library. Another title in the same series covers the BASIC programming language. (Microsoft Press, 16011 NE 36th, Redmond, WA 98073-9717.)

The Apple IIGS Book

By: *Jeanne Du Prau and Molly Tyson*
Published by: *Bantam (1986)*
softcover, 240 pages, illustrated
List Price: *$18.95*
Reviewed by: *Mike Markowitz*

The agony of being a technical writer consists largely of trying to document complex systems while they are still being designed. A technical writer is someone who bothers engineers with questions while they are trying to work. So I felt a natural sympathy for the authors of *The Apple IIGs Book*. But knowing the rush of last minute configuration changes that attend the birth of any electronic device, I was naturally skeptical to see the book on sale months before any of us lowly ones would be permitted to purchase the wonderful new computer.

Surely the thing Apple finally delivers will differ in many details from the thing described in the book. Nevertheless, this is a solid work of documentation. It was an inside job. The authors are senior writers in Apple's User Education Department. They explain the tangled story of the genesis of the IIGS, and put it in a context that any Apple II user will understand.

Chapters cover the mouse interface, the Finder, classic applications, peripherals and the control panel program. A final chapter covers very basic computer concepts for beginners in a thoughtful, non-patronizing way. This is not a reference for the hardcore hacker. For the techies, Bantam is also publishing *The Apple IIGS Toolbox Revealed* by Danny Goodman.

There is a good glossary and a real index. The book is illustrated with photos of the prototype hardware and screen shots of the prototype software.

The Apple IIGS Book is clearly aimed at people who are considering this important new computer. It works. Reading the book will make any Apple II person want to run out and buy one right away.

The book is nicely printed and bound. Although $18.95 may seem like a steep price, it is a small investment for a user contemplating a $1300 plunge into a new system. It might be kept in mind that, as Apple employees, the authors are cheerleaders for the corporate party line. But it will be many months before critical, independent sources start writing about the IIGS with real expertise.

The first chapter of *The Apple IIGS Book* appeared in the November, 1986 issue of *A+* magazine. Bantam has always been able to get books on hot topics out the door faster than any other publisher. *The Apple IIGS Book* is a useful, informative quickie. (Bantam Books, 666 Fifth Avenue, New York, NY 10103.)

EDUCATIONAL

Term Paper Writer

Produced by: *Paul Zuzelo*
Published by: *Activision (1986)*
For: *Apple II series (128K) or IBM PC and compatibles (256K)*
List Price: *$59.95 softcover*
Reviewed by: *Mike Markowitz*

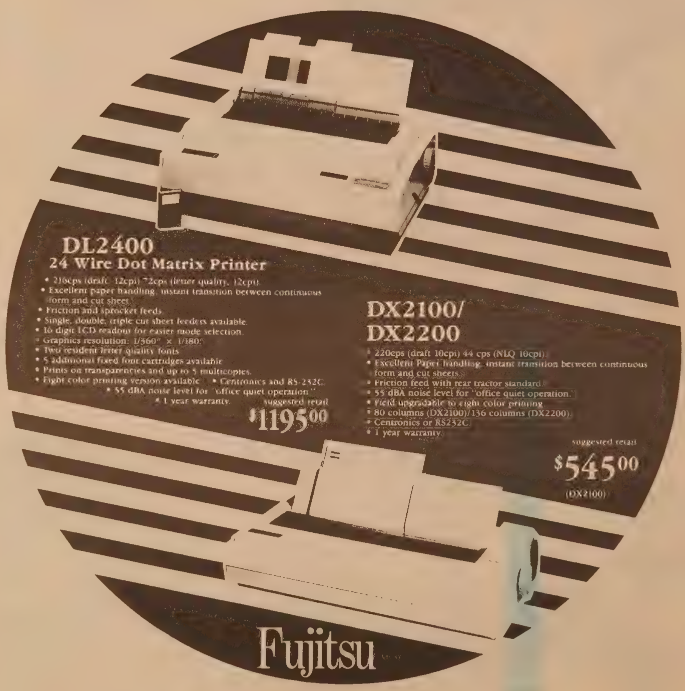
Even for good students, writing a term paper is an ordeal that is often left until the last possible moment and accompanied by panic, stress and substance abuse. Writing a paper is also a proven and powerful way to learn important skills of research, organized thinking and verbal expression. Unfortunately, as educational standards continue to decline, it is an experience that fewer and fewer high school or undergraduate students will enjoy, or suffer.

Term Paper Writer is an integrated software package designed to take some of the pain out of student writing. It consists of four modules:

The Notetaker: A "card file" that creates a database of notes and references that can be edited, searched, sorted, printed or pasted into your text. The Notetaker only has room for about fifty cards, but they can be quite detailed (up to 35 lines of text, plus keywords and source data).

The Outliner: A flexible "outline processor" used to brainstorm, group ideas, or generate a formal outline that can be incorporated into your text or used as a Table of Contents. A split-screen feature

Printing Solutions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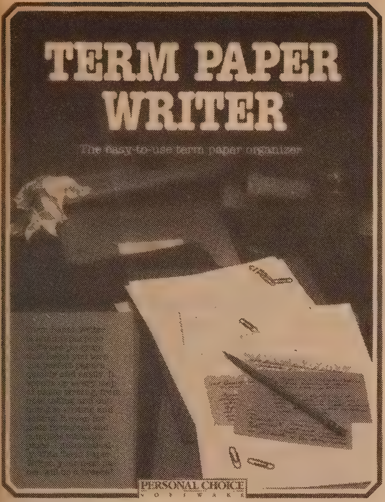

Term Paper Writer reduces the pain of one of school's most harrowing and valuable experiences.

makes it possible to have your outline displayed alongside your text.

The Writer: A no-frills word processor limited to about 20 pages of text. Features include an insert/overstrike toggle, block move, copy and delete (with an Undo key), a wide variety of cursor movement options, and visible control characters that define print formats. A nice feature for writers working to a specific length requirement is the running word-count total that can be displayed by pressing control-W at any time.

The Footnoter and Bibliography Compiler: Uses the notecards created with the Notetaker to insert footnotes and format the bibliography. The user must select one of three footnote styles (which cover the most widely used standards for college courses in the Humanities and Social Sciences).

Term Paper Writer takes up both sides of a disk. Your files must go on a separate work disk for each term paper. The Apple version of *Term Paper Writer* uses Diversi-DOS, a high-speed customized operating system. The IBM PC version uses a work disk formatted normally with MS-DOS. While it is possible to use *Term Paper Writer* on a single-drive system, a second drive makes the program much easier to use. The program is copy-protected, and neither version makes any provision for hard disk installation.

Configuring the program is quick and easy. The menu structure is logical, and there are pop-up "Help" windows for each of the modules.

The Apple version runs on the Laser 128 and Franklin 2000. The PC version runs on the Tandy 1000. Most dot-matrix printers are supported, but not daisy-wheels. Many students get true letter quality printers because traditionally-minded professors refuse to accept dot-matrix output. The program should have provided a standard Diablo 630 or plain TTY printer driver!

The 100-page manual is spiral-bound so it will lie flat when opened. This is a great convenience. The documentation is generally clear and well-illustrated with screen shots, but it suffers from the common economy measure of trying to fit Apple and PC versions into one book. The manual has a good index. *Term Paper Writer* is complex enough that the average user will need to study the manual quite thoroughly before attempting to write a paper.

Perhaps the greatest deficiency in the program is the lack of a spell checker. For professional writers, spell checking may be a convenience, or an afterthought, but for student writers it can be a difference of a whole letter grade or more. Even if it required another disk, a generic spell checker, for the common words most frequently missed, could have been included in this package at little additional cost.

Term Paper Writer is not a substitute for a general-purpose word processor. While it would be a good product for a college freshman with a new Apple or PC clone and some previous computer experience, I would not recommend it as the first application program for beginners in high school. *Term Paper Writer* implements a very structured, disciplined approach to writing. It would not be much help to a student with no previous research or writing skills. An inspired high school teacher with plenty of computers could build a wonderful writing course around this product (but an inspired teacher doesn't need computers). One danger of a product like *Term Paper Writer* is that a skeptical veteran teacher might have difficulty believing that such polished, well-organized work was actually done by a student.

While the integration of the Notetaker, Writer, Outliner and Footnoter is smooth, it is still not a good fit to the way most writers actually work. A true "windowing" environment, where multiple bits of text, notes and outlines can be shuffled around on a screen as messy as a real desk top is far more intuitive, flexible and (potentially) creative. This, of course, requires more advanced hardware than the Apple II or basic IBM PC, but it is certainly the direction for the future of learning. The team of seven programmers and three designers that created *Term Paper Writer* should now try for something more ambitious than a simple port over to the Macintosh, GEM or *Windows* environment. (Activision, Personal Choice Software, 2350 Bayshore Pkwy., Mountain View, CA 94043.)

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USER GROUP NETWORK

By Mary Eisenhart

This month *MicroTimes* moves into a new dimension in Southern California. Now all you modemers can read the current issue on the **American TeleWeb** system, (213) 372-4050. **Dave Silverberg** has done an excellent job of posting our stories in a simple, easy-to-use menu format, so even a beginner should have no problems. And when you get done reading *MicroTimes*, you can go on to read TeleWeb's other boards, including the *Easy Reader* newspaper, a restaurant guide, a home loan board, and much more. The board is free to callers, so you'll be able to peruse its contents at your leisure. It runs at 300/1200 baud, 7-1-N.

In other LA news, **Michael Johnson** has help for beginning computer users. Neophytes wandering through the silicon jungle are invited to contact **LAC-BUG, the Learn About Computers — Beginner's Users Group**, at 6506 Arizona Ave., Suite 127, LA 90045, (213) 372-8909. The group supports users of all computers, and even welcomes those who don't have a computer yet. According to Michael, the club is "great for the absolute beginner, computer-shy, completely confused adult and all children ages three years old and up." Members receive educational materials and hands-on training; those who can't make the meetings in the greater LA area can receive help via mail, newsletter, cassette tapes, telephone, video and modem. Adds Michael, "We are also starting a computer, peripherals and electronic equipment exchange post where members can trade upwards, downwards, sideways or whatever—non-commercial." He concludes, "This is the perfect organization to learn what computers are all about, how individuals can use the computer in their own lives, stop being afraid of computers, take command and control of computers, and learn how to make computers make you money." So if this sounds like something you could use, give LAC-BUG a call—the phone is a 24-hour line.

Foreign-language word processors take note: **Ari Davidow** of Berkeley sends word that there's a **Hebrew Users Group** in Berkeley, which is, he says, "a useful resource for anyone who wants to play with the letters or has a need to type Hebrew-based languages on a computer." The club was organized by **Jack Love**, who can be reached at (415) 845-7793.

In the **Good News For Orphan Computer Users** department, we have a letter from **Allen L. Wilkinson** of **Wilkinson Software** in Westminster. Wilkinson Software offers comprehensive support for users of **Eagle** computers. Allen points out, "Your readers may be interested in knowing that PC-compatible Eagle systems can run EGA, Western Digital controllers, RLL controllers, networks, EMS, etc. They may need the latest upgrades; even the earliest 1600s and PCs can be updated to a very high degree of compatibility." Wilkinson offers a free tech support line at (714) 895-1759, 9 am-5 pm Pacific Time, in addition to a full line of parts and service. "Everyone at Wilkinson Software formerly worked at Eagle Computer, so we are very knowledgeable about the system," says Allen. "We've been in business for a year now, so we are fairly well established, but it is difficult to reach all the Eagle owners out there. That is why we are writing." Well, Eagle owners, consider yourselves notified.

Curtis Jones sends in an update on the activities of **APLBUG**, the **APL Bay Area Users Group.** The March 24 meeting (held, as always, at I.P. Sharp Associates, 220 California Ave., Palo Alto, at 7:30 pm), will feature a presentation by **Ed Myers** of the APL*PLUS system for the Macintosh. Ed will also answer questions about APL for the PC.

In other APL news, **Ed Cherlin** is working on a project to bring a public-domain version of APL (A Programming Language) to schools, with versions slated for the Apple II, C64/128, and CP/M machines. The objective is to make copies of the language available so that students will be induced to learn the language. He's seeking contributions to fund the project. If you're interested and want to know more, call Ed at (916) 938-4684.

Something for the collectors in our midst: **David Hewit** of Middletown, PA sends word via **The WELL** that he's written software for use in cataloguing record, tape, video, etc. collections. It includes fields for date recorded, band name, theater or studio name, city, state, type of music, recording source, sound/image quality, and noise reduction. The program can generate over a dozen different reports, and will print cassette tape labels. It runs on IBM PCs and compatible machines. David is willing to send a free demo copy to all interested parties—he'd like a donation of $2 to cover costs, but it's not required if you're an impoverished collector. He can be reached at (717) 944-5079, 2423 Schoolhouse Road, Middletown, PA 17057, if you'd like more information.

The **Bay Area AT&T Users Group,** whose birth and infancy we've been watching with interest, seems to be off to a fine start. We received the first issue of their newsletter, which included such useful information as the AT&T Tech hotline (800/922-0354) and the names and numbers of several AT&T technical consultants. Meetings are held on the first Wednesday of the month, usually at the AT&T Building, 1000 Broadway (at 11th), Oakland. Call **Maurice Aranda** (415)972-5479 for information. The club recently held elections, but the position of vice chairperson is still vacant, so if you think you can contribute to the world of AT&T users, please give Maurice a call ...

Jim Thomas of **AUGment**, the **Amiga Users Group** in Fremont, has notified us that the group's meeting location has changed. Meetings are now held on the second Friday of the month at Hewlett-Packard, 5301 Stevens Creek Blvd., Cupertino. You can call the AUGment hotline at (415)651-1160 for more information.

Robert Williams would like to alert AutoCAD users in the Santa Cruz area to the existence of the **AutoCAD Users Group of Santa Cruz.** This group is just starting out and is actively looking for new members. Meetings are held at the Citicorp Conference Room, 806 Ocean St. in Santa Cruz, on the first and third Tuesday of the month, from 7 to 9 pm. Interested parties are invited to call (408)462-0448 for further info.

Pete Ellison of Burbank, a stalwart user of Tandy-Radio Shack computers, writes that the erstwhile **California Computer Federation** (a TRS group) has changed its name and has plans to continue its expansion throughout California. The club now goes by the name of **United Computer Federation**, and Pete sends us listings for four local chapters: San Fernando Valley (818) 840-8902; Los Angeles (213) 420-7632; Orange County (213) 692-3073; San Francisco (415) 469-3172. If you'd like to know more, or if you're interested in starting a local chapter, give Pete a call at (818) 840-8902.

The **Commodore Connection User Group** of Antioch has had some changes, according to publicity chariman **Mark White**. The group now meets at Homestead Savings, 1411 A St. in Antioch, at 7:30 pm on the third Monday of the month. It also operates a BBS at (415)458-1005, 300/1200, 24 hours, for Commodore users only. If you need more information about the group, call secretary **Nina Hoops** at (415) 754-9054.

Also on the BBS front, **Valley Systems Software** in Southern California is operating a board that takes the concept of the free BBS into a new dimension—this one has an 800 number. The **Computer Tele-Comm System** (818) 362-0995 offers meeting places and computer supplies; it also has contests, with prizes such as a 20 meg hard card, 100 diskettes, a $50 gold piece and more. Callers access the board through its direct line (the 818 number) for their first call; after that they have access to the 800 number. The board runs at 300 or 1200 baud, 24 hours a day, 8-N-1.

Frank Orem of Walnut Creek sends updates on **POPnet**, a low-cost game and social system with boards in several areas, each with its own user base and particular atmosphere. Each board has at least 10 lines, so it's easy to get on, play games and interact with other users. According to the clippings he sent, the boards enjoy great popularity among the teenage computerist population, so if this sounds like your kind of online activity, check it out: POPnet Berkeley (415) 527-4510, POPnet San Ramon (415) 830-1191, POPnet Walnut Creek (415) 932-4263. Frank also says that he's interested in talking to those who might want to set up their own POPnet board on a franchise basis; if you're interested, give him a call at (415) 932-1146.

Devin Woods, sysop of the **Affection Connection BBS** in Simi Valley, announces new improved service, with multiple dial-ups and inter-line chat capability (which, he says, is free for the first 60 days; after that, he and co-sysop Bruce will determine a reasonable rate to charge users). He adds that the accounts of paid users of the old Affection Connection board will be credited to the new board. Says he: "We expect that the old regulars will settle right in and make themselves at home, and we know they'll drag in some interesting folks for you to meet. Affection Connection has been sub-titled 'The Manor House,' which can be your home away from home. We've started to add material to the download library to help spread the wealth of public domain software. There are rooms set aside for all the standard fare. If you can't find a room that suits you, we'll call in the carpenters and have them build a new addition for you!" Devin and Bruce aim to please, and they invite your calls at (805) 527-7464 and (818) 704-8588.

That's about it for this month. We hope to see some of you at the **West Coast Computer Faire** at the end of the month in San Francisco—there'll be plenty of exciting exhibits and conferences, and we hope you'll come by our booth and say hello. Meanwhile, keep those cards and letters, virtual or otherwise, coming: US Mail to MicroTimes User Group Network, 5951 Canning St., Oakland, CA 94609, and e-mail to **microx** on The WELL, (415) 332-6106. Southern California users will soon be able to send us e-mail on the TeleWeb board—we'll keep you posted. ☐

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Bullseye BBS. Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

213

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include employment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

The Wargames RBBS. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest PC news, special news reports, BBS listing, messages, e-mail, downloading/uploading, color/music online. Best of all, it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Jason Lin (213) 393-9777.

International Collectors Network. Coins, stamps, baseball cards, books, records, antiques and anything collectable can be bought, sold, or traded on the International Collectors Network BBS. Regional lists of collector events and shows in many categories. Also names and addresses of many collector organizations. Accessible using PC Pursuit. Data phone available 24 hours, 7 days at 300/450/1200/2400, 8, N,1. (213) 204-0646.

The Computer Consultant's Network, (213) 479-4074. Running a modified version of Martian! Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

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Hughes Aircraft Message Service. Uploads and downloads for Mac, IBM, Commodore, Atari, etc. Public message boards. (213) 549-9640. 300/1200, 24 hrs., 7 days.

Monolith-1.7 great public boards, private electronic mail, social events. (213) 659-JEDI. 24 hours, 1200/300. Sysop: Erik Goldman.

Mid-Cities Atari ST BBS. 300/1200, 8-0-1, 24 hours. (213) 867-1943. Sysop: Darin Ferraro.

PC Heaven. A multi-computer BBS that features downloads for many different PCs. E-mail, files for various machines, general to SIG message bases. No fees, no special application request forms. Just a fun BBS for everyone. (213) 374-7929. 300/1200, 7 pm-7am M-T, 24 hrs. F-S-S. Sysop: Tony Reeves.

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408

Atari Base BBS (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

Byte Bandits ColossusNet. (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

Evergreen PC Users Group (EPUG-1) (408) 270-4085, San Jose. 8-N-1, 1200/450/300 baud, 24 hours. Sysop Bob Allen. 32 megabytes online, 34 directories created by Special Interest Users.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modem technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 299-3801 no fee. A non-profit BBS focused on housing issues in Santa Clara County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop Ann Dannelly.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV in Lrn (408) 247-4769.

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Tardis Information System. (408) 266-3555, 300 baud, Atari-oriented but all users welcome. Midnight to 9 am only. Tardis Systems is proud to present the debut of a pseudo-real time game simulation called "Night Movement." The plot is to protect the fictitious San Jose Army Base from terrorist attack. There is space for 200 players, and it starts January 1, 1987. Sysop: The Doctor.

Computer Tyme. (408) 732-2187. 300/1200, 24 hours weekends, 7 pm-9am weekdays. Sysop: Gary Araki.

Gino's. (408) 371-2703. 300/1200, Commodore UL and DL. Sysop: Porkchop.

The PET Sematary. (408) 263-3486. Commodore specific, X-Modem, Punter files, XSee. 300/1200 baud, 8-N-1, weekdays 5 pm-10 pm, weekends 10 am-10 pm. Sysop: Grave Robber.

Enable BBS. (408) 998-8927. 300/1200, 24 hours. We're here to provide support for your computer. IBM based, but all users welcome. Also featuring "Dear Enable," the alternative to suicide. Sysops: Rob Ehlers, Tim Duncan.

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INTEREX User BBS. (408) 746-0834. 8-N-1, 24 hours, 300/450/1200 baud. Designed to accommodate INTEREX affiliated users, along with all other users of HP computers. There are sections for HP 3000, HP 1000, HP 9000 and HP Series 100 computers, including the Vectra. One important topic is intended for users to pass along their comments/suggestions/requests of HP lab folks, to INTEREX, for delivery to HP, helping affect the course of new products and enhancements from HP. Sysop: Jack McAlister.

Comp-U-Help BBS. (408) 286-8332. 300/1200/2400 baud, 24 hours, 8-N-1. IBM and Atari ST oriented. No fee, dBASE SIG, lots of downloads. Sysops: Stuart Smith and Eric Smith.

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Kay*Fog RBBS. A system designed for novice callers. No fees, but registration required. PO Box 11135, San Francisco, CA 94101. Sysop: Bond Shands. (415) 285-2687, 300/1200 baud.

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BAKUP (Bay Area Kaypro Users and Programmers) (415) 223-2237 RBBS & RCP/M. Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

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ROOTS BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 664-2811.

The General Store Public Domain Programs. Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

Software First BBS 24 hrs., 300 baud. (415) 459-1544 Marin, (707) 579-1478 Sonoma. 23 message boards restaurant, sales, Amiga, ST, women's forum, reviews, sci-fi, general E-Mail, monthly specials on hardware, software, peripherals.

Bay Connextion BBS (415) 621-7561, 9pm - 9am. 300/1200 baud at 8/W/I. Macintosh Software, Classifieds, Personals, Sexual Freedom, and Star Trek. Claude Wynne, sysop.

Earth-Rite RBBS. We specialize in Earth Religion and related topics. We are not a software exchange. (415) 651-9496. 24 hrs., 300/1200 baud.

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Guideboard, Cabbie's Guide to San Francisco. Where to go for restaurants, doctors, auto repair, etc. The sysop gets his tips from driving a cab; the callers furnish the rest. The BBS also has an resident astrologer, Swami Tommy. The Swami gets his tips from the stars. Ask him any question. (415) 864-3858, 300/1200 baud.

Entrepreneurs BBS: Official BBS for Community Entrepreneurs Organization (CEO), and XT Compatible Club. 1200/300 baud. 24 hours, 20 megs., 8 bits, no parity. Entrepreneurial networking and information, brainstorming, and on-line support for IBM XT clones. Sysop Edwin Rutsch. (415) 552-9070.

APT Action BBS. C64 board dedicated to exploring on-line entertainment. Free ACTION-AUT software. 24 hours, 300 baud, (415) 322-3213.

RSVP BBS. (415) 659-9169, 300/1200, N-8-1. 24 hours. Sysop Jim Thomas. FAUG Amiga User Group discussion and file area, Dr. Who forum, Sanyo, IBM, CP/M files, CP/M forum, Ohlone College forum.

Marin Community BBS (415) 459-3326. 300/1200 baud, 6 pm - 10 am M-S, all day Sunday. 520 ST/Atari information. Sysop Dave Powers.

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520 ST Atari BBS (415) 783-5545, 24 hours, 7 days a week. 300/1200, 8 data bits, 1 stop bit, no parity. Official Sixteen Bit Atari BBS of the San Leandro Computer Club, this system offers full support for all Atari ST system users. Currently running on a ten megabyte hard disk system, the system has many special interest areas including graphics, C, Pascal, LOGO, Basic, MIDI / music, communications and more. Supports four types of XModem/Modem7 and Kermit protocols. Call today! Sysop: Michael Curry.

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Insight BBS (415) 229-0551. 300/1200 baud, 24 hours, 7 days, 8-N-1. Now running PC-Board on an IBM clone with 20 megs on-line. The board now has 7 conferences and is looking for "message" oriented people who love to talk. There are no status levels, and everyone is invited! Carl Orsi, sysop.

The Precinct BBS (415) 797-2559. 24 hours, 300 baud, telecat II+. Variety of sub-boards, private e-mail and online gaming. Sysop: The Sorceress.

AIDS Information BBS (415) 626-1246. 24 hours, 300/1200 baud. Sysop Ben Gardiner. Free. All welcome. Statistics from Atlanta and San Francisco displayed, updated regularly as received. Sample Q & A about AIDS, based on clinic and phone exchange experience. Mail send/receive on AIDS; please not on other subjects due to limitation of one phone line. Please also no more than one hour per day. Mobilization Against AIDS information here. Calls to this BBS never disturb anyone.

Actrix Enthusiasts RBBS / RCP/M (415) 968-1783. 300/1200 baud, 24 hours, Free. Registration required. 46 megabyte CP/M system. In Mountain View. Sysop: Andy Bajka.

BBS-JC Just Computing. (415) 961-7250, 7E1/8N1. 24 hours/7 days, 300/1200/2400. Amiga and CBM public domain software. If it's new, see it here first! 8 sections including Commodore announcements are currently in operation. This board is especially for "Silicon Valley" Commodore users. Sysops: Thad Floryan and John Cronin.

Bug's Net HP. This bulletin board has over 20MB of PD software available. Message areas include HP300, IBM PC Technical and consultants forum. Fido node #10/777 (pending). 300/1200/2400 baud. 24 hours. (415) 236-1823. Sysop: John Buginas.

Professional Software Programmers Association. 830 Bay Avenue, Suite G, Dept. F, Capitola, CA 95010. A 24 hour service and support bulletin board for computer professionals. (408) 462-2829. 8 bit, no parity, 300/1200/2400 baud. No fees. Product reviews, professional job registry and consulting registry services. Ask for copy of the Association's free monthly newsletter and membership information packet.

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LaserWriter BBS. (415) 261-4813. 300/1200 baud, 24 hours. BBS dedicated to desktop publishing. Sysop answers all related questions. Located within Allen Computer Graphics, desktop publishing specialists. Files, messaging, user groups, e-mail. Upload direct for LaserWriter printout or to order other products offered by Allen Computer Graphics. Macintosh and other computers welcome. Sysop: Tom Allen.

The Records Department. (415) 426-0470. User registration required. Public domain and shareware programs available for download at 300/1200/2400 baud. Caters to IBM; also Apple, Commodore, Atari. Large, friendly discussion section with something for everybody; games, voting booth, technical help. Bill McCauley, sysop.

Silicon Valley Computer Society BBS. (415) 968-6891, 300/1200, 24 hours. Sysop: Herb Shear.

Computer Adventure Center, C.A.C. 24 hours daily, 300-2400 baud, in Fremont. No fees, IBM based but open to all callers. New BBS#: (415) 490-7365. Sysop: Al Demar.

Breakthrough Software BBS. Support for TimeLine users. (415) 892-0408, 300/1200/2400 baud, 8-N-1. XMODEM or Kermit protocols. 7 days, 24 hours.

EBMUG BBS. Running 24 hours a day, 300/1200, 8-N-1 at (415) 848-2609. Private mail system, public messages, Macintosh software.

KAY+FUN RCP/M. (415) 572-8219. MS-DOS, CP/M, modems, business applications (e.g. *dBASE*, *Lotus*, *Reflex*, Wordproc). General discussion of commercial and public domain software. Also public domain and private file transfers and more. FREE online registration. 300/1200/2400. Sysop: Ernest Hintz. Sponsored by KAYFUN users group.

Programmer's Circle. (415) 239-1722. 8-N-1, 300/1200, weekdays 3 pm-11pm. The Programmer's Circle specializes in carrying source code and tools to aid the programmer. Special attention is given to the Macintosh and Apple II computers, but all computer users are welcomed. Data files are online for the Mac and Apple II computers. Sysop: Roger Gibby.

The Live Wire. (415) 540-0529. 300/1200, 24 hours. A digital magazine for the graphic-arts community (printers, typesetters, self-publishers, artists). Free. Sysop: Rick Hepting.

SIGSIG BBS/RCP (formerly MEBBS) is back online! Member of the FOG and PRACSA networks. Supporting CP/M and MS-DOS public domain software and a public-access message system. No fees, novices welcome. Online registration for FOG, PICONET and PRACSA members. 24 hours, 300/1200/2400 baud. Sysop: Jim Switz. Located in Mountain View. (415) 968-7369. Call today!

The Far Side. (415) 471-1138. 300 baud, Tele-Cat II+, 24 hours.

Machiavelli Interface. (415) 659-1168. 8-N-1, 24 hours, 7 days, 300/1200. IBM and compatible PC board with Net-Mail feature. 30+ megs of downloads, conferences. Sysop: Dewayne Mikkelson.

Cold Moon On A Single Star. (415) 668-6101, San Francisco. 24 hours, Fido board. Chinese culture, history, language, Chinese cooking, discussion, etc. Asian community events. Sysops: Joseph Puig and Susan Chen.

Dr. Don's TBBS. (415) 885-1973, San Francisco. 300/1200, 24 hours. CarTalk and SportsTalk discussion and special interest boards. Private e-mail. All automobile sportscar enthusiasts, sports fans, softball-baseball-football players are invited to call. Sysop: Dr. Don. Co-sysop: Bimmer Pilot.

Centerville RBBS. (415) 793-3037. 300/1200/2400 baud, E-7-1 or N-8-1, 24 hours daily. Sysop: Joe Halbleib.

The Board. (415) 652-8277. 1200/2400 baud, 8-N-1, 24 hours. Public and private conferences, technical support. For AT&T and compatibles; AT&T PC support conferences. Associated with Bay Area AT&T PC6300 Users' Group. Sysop: Troy Blackburn.

Attitude Adjustment. (415) 939-1639. 8/N/1, 24 hours, 7 days, 300 baud. Call today and get your Attitude adjusted. . .just for fun. If you have an Attitude and want to tell people about it, you know where to call. Small but growing system: 8 message bases, private e-mail, voting, textfiles and a few downloads. Emphasis is on interaction between Adjusters on the message bases. Sysop: Rick Adjuster.

Dial-Your-Match #341 in Hayward. (415) 489-2572. 24 hours, 7 days, 300/1200 baud, no charge. Sysop: The Matchmaker.

Yet Another BBS. (415) 689-8952. 8-N-1, 300/1200, 24 hours, 7 days. Upload/download, entire public domain library of "The Ulternate Source." All makes of software, message base, e-mail. Friendly sysops! Jim and Alex Stewart.

Track 3 BBS. (415) 540-7570, 300/1200 baud, 24 hours, Berkeley. for railfans, roller coaster enthusiasts, transit issues, and the like. Sysop: Robert Parks.

Infolinc RBBS. (415) 672-9270. 8-N-1, 300/1200/2400 baud, over 500 files online, conferences, doors, online chat with other users. Special private line for supporting users, running PC Board 11/6/E, 24 hrs. Sysop: John Palmer.

DYM #56. (415) 964-3255. 8-N-1. 24 hours, 300 baud. Features user match function and e-mail, five message boards including Public, User Activities, The Flea Market (Buy/Sell/Trade) and two Adults Only boards. No fee required, but online registration is required. Sysop: Velvet 150.

Palladin BBS. (415) 332-1655. 1200 baud, 8-N-1, 7 days, 24 hours. Sysop: Al Kalian.

The DeskTop Publisher. (415) 856-2771. 300/1200/2400 baud, 24 hours, 7 days. Dedicated to desktop publishing, with particular emphasis on the use of DOS based hardware and software. Upload / download / messages/conferences. Anyone interested welcome. No fee. Registration required for full participation. Sysop: Freeman Bradford.

The Nimitz DownPort. (415) 276-3677. 8-N-1, 24 hours, 7 days, 300/1200 baud. The Nimitz DownPort offers a wide variety of message bases including Adult. With a BBS that has parties, educational offerings, discussions with nationally- and locally-known "geniuses" and experts, and "hands-on" role-playing games, there is no reason not to dock here. Call today and be a part of tomorrow. Sysops: Lady Godiva and Portmaster Kevin Munrow.

Marin-Sonoma PC Users Group BBS. (415) 927-1216. 300/1200 baud, 8-N-1. Sysop: Howard Leistner.

California ConneXion Partyline. (415) 927-2739. An adult oriented multi-user, multi-interest system featuring matchmaking, 12 public message boards, on-line chat with other users, questionnaires and more! Very fast operating system. 7 meg system. Currently operating with 3 lines—more lines to be added soon. 8-N-1, 300/1200/222400, 24 hours, multiline system on rotary. Sysop: Alan.

Impeesa's Path. (415) 582-4863. 1200/2400, 8-N-1, 24 hours. Focused on outdoor activities. Conferences on camping, hiking, fishing and hunting, photography, Boy Scout activities. Also features "Doors," supports graphics. Sysop: Ed Reardon.

The Wizard Net. (415) 481-8413 San Leandro; (415) 232-6981 San Pablo. Full duplex, 1 stop bit, no parity, 6 am-6pm M-F, 24 hours weekends, 300/1200 baud. A user friendly system that utilizes Commodore color graphics. The more time that you put into the system the more you will be able to get out of it. System has bulletin boards, e-mail, voting booth, a chat feature, ul/dl, and online games. There are no fees, and everyone is welcome. Registration required. Sysops: Dave Rasmussen, Keith Parrish, Olivia Parrish.

AI-NET. Public OPUS board with 20 MB of files. Echo newsgroups for dBASE, Technical Forum, Mainframe Forum, Software Evaluation, Buy/Sell, National Mail, and more. Available between 3 am and 11:30 pm daily. 300/1200 settings: 8-N-1. 125/125 in the Matrix. (415) 776-6628.

SFPCjr UG BBS. Sponsored by the SF PCjr User Group. 1200 baud, 8-N-1, 24 hours. Sysop: Larry Buoncristiani.

RSVP BBS. (415) 659-9169, 24 hours. Japan mail exchange, Doctor Who, Ohlone Forum, Amiga Music-net and Tech-net. IBM/Amiga/Atari files. Always something new! Sysop: Jim Thomas.

619

Ramona BBS. (619) 789-6235. 24 hours, 300/1200 baud, C128, C64, Amiga, Atari, IBM, CP/M. P.O. Box 373, Ramona, CA 92065. Sysop: Digiteer.

Sysware BBS. 24 hours, 300/1200 baud, (619) 278-8661. Commodore machines only. Sysop: Don Malette.

The Nassau XPress. (619) 433-XPRS. 8-N-1, 300 baud, 24 hours. An information and entertainment BBS with 11 message bases including electronics, amateur radio, computer news, music, adventure games, BBS review. Full access is granted to long distance callers with same day validation for new users. UL/DL available using XModem or Punter. Private e-mail, text files, online games and utilities. Sysop: Dan Wright.

702

Public Domain Software Interest Group. (702) 794-3665. 24 hours, 300/1200/2400 baud, 8-N-1. Public domain software available for downloading, message board, and user supported donations of software. Sysop: T. Heisserman.

707

Napa Valley RBBS / RCP / M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Survival Communication Forum. Fido 125/7. Focusing on preparedness and self-sufficiency. Multiple message and file areas. A MedNet member system featuring weekly CDC reports, medical text and news files. Open to all. 23 hours daily, 300/1200 (707) 545-0746. Don C. Kulha, Sysop.

R.A.G. (Redwood Atari Group) BBS. 300/1200, 24 hrs. (707) 539-8889. Sysop: Bill Marlin.

STATE BBS ST and 8 bit Atari. Supports all Atari computers. On line surveys, public domain software, discussion and a built in adventure game (if you can find it). 300/1200 baud, 24 hours a day, full duplex. Sysop: Mikkel Lawrence. (707) 585-2194.

Softy's BBS. (707) 437-4334. 24 hours, 8N1, full, 300/1200. An Apple BBS with a technical theme. We have boards for IBM as well. Retail store advertising with discounts for users of this BBS. John Hagen, sysop.

UNIBLAB BBS. (707) 422-1669, 8-N-1, 24 hrs. 300/1200 baud. Community-oriented BBS. On-line games, SIGs, XMODEM protocol, no fee. Sysop: Ben Harris.

Sigma BBS. (707) 274-8561. Call this BBS for the best IBM-PC/compatible RBBS in the Redwood Empire. Over 650 downloadable programs. We feature "Doors" software for your adventure playing moods and Tradewars II, a multi-player galactic challenge. Tradewars can support up to 70 players and features sector movements and planet creation. We also support the latest in RBBS-PC Bulletin Board Software, Procomm communication with utilities software and many other programs. 24 hours, 300/1200/2400, 8-n-1. 72 minutes allowed daily. Sysop: Randy Sun.

Valley of the Moon BBS. (707) 996-7922. 24 hours, 7 days. 300 baud. Free. Primarily set up for Radio Shack and COCO II, but all are welcome. Come join us. Sysop: Wes Ford.

714

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Computer Consultant's Network problems, solutions for business,legal and engineering problems. Referral service. (714) 982-5994 intro file.

Environet. (714) 731-6439, 300/1200, no parity, 8 bits, 1 stop bit. David Salahi, sysop. The online source of information and contacts for the environmental community. To log on, use user id 105, password PARKS.

El Toro RBBS/RCPM. (714) 855-0672. 24 hrs. 7 days/week. 300 / 1200 / 2400 baud. No charge, open access, no registration. Specialize in ZCPR3 and CP/M PD utilities. Sections for AMPRO, SB180, dBase II, TPascal, Modula-2, Wordstar, ZCPR3, modems, SIGM and utilities. Over 3000 programs in 88 megabytes online. Public E-mail system. Easy to use ROS system. The collection point for Modula-2 in So. Calif.

K-WEST. (714) 646-3060. 8-N-1, CP/M and DOS. 24 hours, 300/1200/2400. Sysop: Peggy Lloyd.

The Byte Zone BBS. 7 days, 24 hours, 300/1200 baud. Serves all Tandy computers and many others, including MS-DOS. Features adventure help files, electronic mail, message bases and download menu. Sysop: Franco Collino. (714) 639-3566.

Easy On of Moreno Valley. (714) 924-4324. Offering 65 meg of public domain (5000 files) for IBM and CP/M operating systems—Kaypro 10 networked. 2nd biggest library in California, with a local network in Newport Beach and across continental USA. BBS offering private one-on-one tutoring to endusers. Leave msg. for sysop if not available—we return your

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CMC Computer Systems. (714) 835-0910. Information boards: Apple II, Apple III, Laser 128, IBM, Buy/Sell, hard disks. 300/1200 baud, 24 hours. Sysop: Charles F. McConathy.

Amiga-Line. (714) 772-4097. 24 hours, 300/1200 baud. 100% Amiga for Orange County. Sections for graphics, sound, BASIC, ROM kernel, C, Hardware and Games. Sysop: Tom Jacobsen.

Diamond Bar BBS. (714) 861-7268. 8-0-1, full duplex. 24 hours, 365 days. Sysop: Albert E. Ray, Ph.D.

The WOCCUG Board. Operated by West Orange County Commodore User Group. EBBS, 8-N-1, 24 hrs, 300/1200. (714) 772-4182. Sysop: Mark Stanford.

The Buckeye BBS. (714) 821-0589. C64, Punter, Xmodem, 300/1200 baud, 24 hours. Sysop: Art Collins.

FBBS. (714) 823-3673. 24 hrs., 300/1200 baud, full duplex. 50 megabyte system based in Fontana. Downloads for Commodore, Amiga, IBM, Atari, Apple, CP/M. 17 active message bases, weekly online magazine. Sysop: Larry Krzewinski.

GameNet. (714) 520-4263, 24 hours, 300 baud, multiuser board. This Orange County based system features interactive games, a chat area, and an online mail section. Sysop: Merlin or Patches.

Bits and Pieces Times BPT-#. (714) 630-5619. 300/1200, No parity, full duplex. 9 pm-9 am. Sysop: John Callaci; sub Mike Dalton.

Software Exchange. (714) 552-3515. 300/1200/2400, 24 hours, 7 days, 8-N-1. Specializing in public domain and shareware for IBM and compatibles. Over 2000 programs in 42 megabytes on line. Features include private and public message bases, conferences and online help and menu screens. No charge, but you must register. Sysop: John Coon.

C-TUG BBS. (714) 458-1288. Punter protocol, 24 hours, 300/1200 baud. Sysop: Les Gertz.

77-Amiga. (714) 77-AMIGA. 300/1200 baud, 24 hours, 40 meg. drive. Sysop: Al Cheser.

717

The Dead Board (717) 677-9573, 24 hrs., 8 bit word, 1 stop bit, no parity, 300/1200 baud. Grateful Dead tape trading and info; space for bulletins, ads and public mail.

805

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

KERNCOM. (805) 322-8800. 300/1200/2400 baud, 24 hours, 7 days. KERNCOM has operated continuously since March 1983 for the IBM community. KERNCOM is owned by the Kern Independent PC Users Group and is never off line except for routine maintenance. Sysops: Rick Heming and Jim Harrer.

CCCUG BBS. Central Coast Commodore Users Group. (805) 934-2216. 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads. Sysop: Greg Johnson.

PC Vision. (805) 487-3149. 300/1200, 8-N-1, 40 megs. PC-, MS-DOS programs. Sysop: Frank Driscoll.

Tech-Talk. (805) 922-5488. 300/2400 baud, 24 hrs. 21 meg pd software on a 63 meg system. Online registration, instant access to all files, MS/PC-DOS, CP/M. Sysop: Jerry D. Russell. Public access "Collie ver. 1.2."

CompuLink Fido. (805) 494-3350, 300/1200/2400 baud, 24 ours except during netmail. Huge selection of ham radio files; other features include echomail, Outside, and role-playing games (StarTrek, Gamma World, Champions, AD&D, more!!). 20 megs—call today! Sysop: Eric Daymo.

Mustang WILDCAT! BBS. (805) 399-1887. Bakersfield, CA 300/1200/2400/9600 baud. 24 hours, 7 days. This board serves as the development home for the WILDCAT! Bulletin Board System written for the IBM PC. Free access to over 40 megs of download files on your first call. The message section supports conferences in Turbo Pascal, PC Utilities, WILDCAT! updates, electronic stock reports, and many others. Sysop: Jim Harrer.

Affection Connection. (805) 527-7464, (818) 704-8588. 24 hrs., 7 days, 300/1200 baud. Multi-user BBS offering live on-line chatting, matchmaking. Sysop: Devin Woods.

818

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Oracle BBS (818) 980-6743, system password MICROTIMES, is a multi-interest, multi-user BBS running 6 phone lines on a CompuPro. Features include 8K messages, comments on messages, match-maker, adult material section, online CHAT between users and much more. 24 hr., 300/1200 baud.

The Agency BBS. 300 baud. Free. All systems welcome. 16 message bases, large data base of over 100 files on various subjects. Special areas for special interests such as gaming, business programs, and MIDI (Musical Instrument Digital Interface). 24 hours. (818) 794-5001.

The Audiophile Network. A databoard system for the music lover and audiophile. Information, specifications, prices and the latest news about hi-end stereo components. 24 hours, 7 days, unless down for repair. (818) 988-0452. (818) 782-1676 (voice) for info.

Speak Easy BBS. 300/1200 baud, runs on an IBM-AT with 26 megabytes. UL/DL with Xmodem, games, 20 message bases, dating service (questionnaire), voting booth. All computers invited! (818) 905-6262.

Ski Center West. 300 baud, full duplex. 50 ski resorts in western states. Bulletin board, E-mail, buy & sell equipment, merchant section, more. (818) 982-2530. Information (voice) (818) 982-3571.

Warren Communications Network. TI BBS, 24 hours, 300/1200 baud, graphics, speech, downloads. Sysop Douglas Davis. (818) 361-9294.

The Hotline Operated by Video Take-Out; callers worldwide. Online orders, The Newsletter, Newsbytes, Hits (records, tapes, CDs, European music). The system is free, easy to use, 24 hours, 7 days, 300/1200/2400. 8-N-1. (818) 766-6442.

Party & News Line. Chat with other live users by modem! Read the latest computer news provided by BBS Press. Use your modem and call (818) 842-3322 now! 300 baud.

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include emkployment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Light Artists, LTD. (818) 985-0541. 24 hrs, 300/1200/2400 baud. Sysops: Marty and Gerald Lehtola.

The Mogur's EMS. (818) 366-1238. Private and public e-mail, 20 special interest group message sections, 8 database sections, 27 megabytes, upload/download with xmodem, open to all systems, operating systems and users. Numerous unique and innovative features using custom software. In operation since 5/1/81. Multiuser with two lines, 2400/1200/300 baud, 8-1-N. Sysop: Tom Tcimpidis.

The Dugout. (818) 248-0562. Operates at 300 baud on a TI-99/4A but welcomes all systems. Includes message base, computer events, on-line adventure, xmodem d/l, and more. 6pm-11pm daily. Sysop: Jim Edwards.

The Talk Channel. (818) 506-0620. 24 hours, 300/1200. Sysop: Gary Clarkson. A multi-user, multi-interest system featuring chat on-line with other users. 20 public message boards, including movie previews, casting calls, dining tips, debate and dating boards. 4 questionnaires, one that you answer in your own words, 3 optional. Extremely fast operation on 22 meg hard disk drives.

LAACE (Los Angeles Atari Computer Enthusiasts). (818) 348-8644. 24 hour, 300/1200 baud, 10 meg online.

The Californian. (818) 368-7497. 300 baud, 24 hours. Color Bulletin Board System runs 24 hours a day, 7 days a week. Dedicated to the TRS-80 Color Computer, but other computers welcome. 9 sub-boards, more soon. No fees; only rule—no attempts to crash the system. Sysop: Jay B. Sanders.

Wizard of Osz RBBS. (818) 709-6978. 300/1200/2400, 24 hrs., CP/M or MS-DOS. Sysop: Mat Satuloff.

Atari Resource Magazine (ARM) (818) 446-5813. 24 hrs., 300 / 1200. Currently serving Atari and IBM computer users. Eleven message bases: general chatter; hangouts, advertise, for sale, XE Atari, ST Atari, modem, ul/dl, other BBS #s, Bible, job board. Sysops: Bob and Kim Reynolds.

RBBS (Bondwell SIG). (818) 787-0156. 300/1200 baud, CP/M and MS-DOS, 24 hours, 7 days. Everyone welcome. No time limit. Instant access to downloads. Files available for PC compatibles, Bondwell models 2 through 36. Hardware notes and tips. New product discussions. Sysop: Jon L. Bek.

Dodge City. (818) 241-4401. 24 hours, 300 baud, soon 1200. Great downloads that change every day. Sysop: The Sheriff.

The MacLodge BBS. (818) 444-9850. 8-N-1, 40 megs, 300/1200/2400. Hours M-F 3:30 pm-7 am; 24 hours on weekends and holidays. Macintosh up/downloads, plus Mac info. Mac users only please. Sysop: Dennis Cosio.

Greycastle BBS. (818) 796-5042. The bulletin board of the San Gabriel Valley Macintosh Users' Group. Operates 24 hours per day at 300 or 1200 baud. 5 megabytes available for 8 sub-boards, XModem file transfers on SnAPP software. Sysop: Bryan Menell, CompuServe ID 72307,2100, GEnie ID B.MENELL.

The Outpost RCP/M. (818) 353-8891, 300/1200 baud, 24 hours. Online games, occult and general text files, CP/M, Turbo Pascal. Sysop: Phil Hansford.

AT&T PC6300 Users' Group BBS. (818) 954-0530. 300/1200 baud, 8-N-1, 24 hours. Only So-Cal BBS "officially supported" by AT&T. Sysop: Eric L. Levinson.

Infotronics Computers BBS. (818) 282-7094, 300/1200 baud, 10 am-7 pm Mon-Sat, Sunday 12-5. 20 meg online. Message bases and file transfers for Macintosh (or Atari ST with Mac emulator), IBM (or Atari ST with IBM emulator) and even the Atari ST computers! (All computers are welcome.) We need users! No fee and plenty of elbow room—give us a call. Running on MichTron BBS software for Atari ST.

The LEDGE PC Board. (818) 352-3620, 8-N-1. 300/1200/2400. Offers full support for Leading Edge Model D and all MS-DOS machines. Other systems are welcome. Online software reviews from Computer Entertainer. Large library of MS-DOS programs available for download. Free to public. Instant online registration gives full system access. Sysop: Joseph Sheppard.

AMP PC-RBBS. (818) 570-4406. 300/1200, 8-N-1, 24 hours. For IBM, program downloads and uploads, personal mail, public message system, 40 megs, no fee. New open sale conference for free for sale or wanted ads. Computer products offered at low price. Sysop: Edward Lee.

Affection Connection. (805) 25-7464, (818) 704-8588. 24 hrs., 7 days, 300/1200 baud. Multi-user BBS offering live on-line chatting, matchmaking. Sysop: Devin Woods.

Excalibur BBS. (818) 355-6949. Atari and other computers. 24 hours, 7 days, 300/1200. Sysop: White Knight.

The Computer Tele-Comm System. (818) 362-0995. 24 hours, 300/1200 baud, 8-N-1. We have meeting places, computer supplies. You can apply for credit cards. Enter our contest to win a 20 meg HardCard, 100 diskettes, $50 solid gold piece and more. We are the first BBS to offer an 800 toll free number. Call us direct the first time, after that call us free. Sysop: Dr. Jeffrey A. Keese.

See-Your-Match. (818) 445-0691. 24 hours, 300/1200. Sysop: Mel Minami.

PC Users Group and BBS For Desktop Publishing. (818) 445-8072. 24 hours, 300/1200/2400 baud. Sysop: Mel Minami.

Fantasy Plaza BBS. (818) 840-8066, 300 baud, 24 hours, 7 days. Fantasy Plaza departs from reality with the most unique and entertaining system you've ever seen! You will be impressed! Sysop: Gregg Collins.

Dial-Your-Match #1. (818) 942-6900 24 hours, 7 days, 300/100 baud. Meet new friends! The original and most unique frienship BBS. Online since October 1981. DYM network allows you to send messages across the USA.

916

The Vortex BBS. (916) 481-0194. 24 hours, 300/1200 baud. Online and RPG games, new ones start often. Message boards include private mail, Dr. Who, game hints, endless story, play by mail. Vote on movies and weekly survey. Articles and BBS listings. No Fee. Register first call. Pamela Lunsford, sysop.

"The Meeting Place" BBS 300/1200/2400 baud. 24 hours, no parity. AE line for public domain downloads. Apple, Commodore, IBM programs available for download. Numerous general files. No fees, all free. Call (916) 662-1838. Woodland, CA.

Family Radio Forum. (916) 481-6320. Christian RBBS for everybody.

SAC TIBBS. (916) 927-3012. 24 hrs, 300/1200 baud, X-modem downloads, graphics, speech. Free. Sysop: Woody Large.

The Devil's Domain BBS. (916) 268-1127. 8-N-1, 24 hours, 300/1200/2400 baud. 4 sub-boards including main, music, jokes/war, and elite. Up/downloading. General files. Voting topics, online gaming. A BBS devoted to have fun! Sysop: Asmodeus.

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG

Inc., 5300 Young St., Willowdale, Ontario, Canada M2N5R2, (416) 733-2933.

Apple Co-op. 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Franklin Users Group International. Supporting users of II, II+, Franklins, and all compatibles. We support all members with a monthly newsletter, "The Clone Ace," a growing public domain library and personal attention. Membership $20.00 a year. Contact Douglas M. Trueman, EastWind Apt. L77, Tecumseh, MO 65760.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

F.O.G. 15,000 member group supporting all CP/M users. Dues of $24.00/yr. include 60-80 pg. FOGHORN monthly's access to 270+ disk library, 40+ RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140+ local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

Getec s.r.l. Contact Silvio Esengrini, Via dei Guarneri Nr. 24,-20141 Milan, Italy. Phone: 39/2/5696502, 39/21 5694185.

Italtel S.p.a. Contact Michelangello Sala, C.Na, Castelletto, 20090 Settimo Milanese, Milan, Italy. Phone 39-2-4388-4288.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

KAPPA (Memphis Kaypro Users Group). Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

The AppleWorks Users Group (TAWUG). c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

FORTH Interest Group, International Office. P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

Apricot User Group (APRICUG). Box 98, Malverne, NY 11565.

Spellbinder Users' Group has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

AstroSoft for the IBM PC. Promotes the use of software in astronomy; disseminates astronomical information. P.O. Box 4451, Hayward, CA 94540-4451. (415) 278-8458.

National TeleVideo Users Group. Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info—David, (415) 753-1552.

Apple Fontrix Club. Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

ASSOCIATIONS

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet most third Wednesdays at 7:30 pm at varying locations. Contact Rodney Hoffman, P.O. Box 66038, Los Angeles, CA 90066, (213) 932-1913 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club. This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club. A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

Valley Computer Club. Monthly meeting at 7 pm, first Wednesday of month in Burbank Board of Realtors Bldg., 2006 W. Magnolia Blvd., Burbank. All types of micros represented. Contact W.R. Robinson, 11850 Louise, Granada Hills, CA 91344, (818) 368-1383.

INTERFACE is a Los Angeles area gay and lesbian computer users' group for socializing and exchanging information. Meetings are open to all, regardless of level of experience. There are no dues or membership requirements. For additional information call Jim (213) 664-1127 or Pam (818) 368-0437.

San Diego Computer Society. Umbrella organization for over 40 Special Interest Groups (SIGs). Sponsors meetings, newsletters and annual computer fair. Meetings at Mesa College, 7250 Mesa College Drive, San Diego, 11:30-4, third Saturday each month. Contact Membership Chairman, P.O. Box 81444, San Diego 92138, (619) 549-3783. BBS (619) 549-3788.

Consolidated Computer Club. Meets first Fridays. 7 pm, Progressive Savings Bank, 12175 Ventura Blvd., Studio City, CA. Dues $25 yr. Send SASE to David Nussbaum, 11558 Riverside Dr., #207, North Hollywood, CA 91602.

Professional Typists/Word Processors Network to meet Sept. 9, 7 pm at Santa Monica Montessori School, 1619 20th St., Santa Monica. Network was formed for homebased typists and word processors to share information and referrals. Meetings consist of outside speaker and networking. $2 per meeting. Contact Fran Brevig, 6399 Wilshire Blvd. #1A, Los Angeles, 90048, (213) 651-1479.

Hughes Aircraft Computer Clubs. This club is for Hughes Aircraft employees only, but the BBS is open to everyone. Upload and download boards for Macintosh, IBM, Atari, Commodore, etc. Each board has its own public message service plus general message board. Contact Bud Grove, 21111 Dolores #146, Carson, CA 90745. BBS (213) 549-9640, 300/1200 baud, 24 hrs., 7 days.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. Contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Micro User's Group — SFV Board of Realtors. Meetings 7232 Balboa Blvd., Van Nuys, 7 pm. third Thursday. Contact Mary Lou Williams, (818) 786-2110 for more information.

South Bay Computer Education Group. Supporting Apple, Atari, Commodore, IBM and compatibles, and TI99/4A. Meeting 2nd Wednesday of each month. Time 7 pm at 3675 Torrance Blvd., Suite 202, Torrance, CA 90503. Contact Jack Ward (213) 530-4879 or Judy Adams (213) 540-5010.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Pro*BUG—Professional Business Users' Group. Formerly Xerox Users Group. Meets 1095 Irvine Blvd., Tustin, 1st Saturday each month, 9 am. BBS (714) 543-3187, 300 baud, X-modem protocol. CP/M, PC, MS-DOS. Contact Allen Ashley, (714) 537-4608.

ICCA (Independent Computer Consultants of America. A nonprofit national association dedicated to the independent computer consultant. Its goals are to promote professionalism within the industry, increase awareness of ICCA to clients, and provide group benefits to members. Meets at Revere House, Tustin, 2nd Thursday, 6 pm. Contact Bill Creel, membership chairman, ICCA-OC, P.O. Box 3067, Santa Ana 92703, (714) 666-1981.

LAC-BUG (Learn About Computers—Beginner's Users Group. All computer owners and prospective owners eligible, ages 3 to adult. Educational materials and hands-on training included with membership. 24 hour telephone: (213) 372-8909. Mailing address: 6506 Arizona Avenue, Suite 127, Los Angeles, CA 90045.

USER GROUPS

AT&T

AT&T PC6300 Users' Group. Meetings at various locations—contact BBS for latest information. Or write Eric Levinson, P.O. Box 7364, Burbank, CA 91510. BBS (818) 954-0530, 300/1200, 8-N-1, 24 hours.

ORCA - Orange Riverside Counties AT&T 6300 UG. Meetings bimonthly, second Saturdays, 11:30 am, at 2144 Michelson Drive, Irvine. Contact Chuck Patten, 1220 Page Circle, Corona, CA 91720, (714) 851-0119, ext. 234.

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

ALPHAGRAPHICS

Alphagraphics. Contact Stella or Jim Muller, 16425 Bernardo Ctr. Dr., San Diego, Ca. 92128, (619) 451-2250.

AMIGA

Amiga Users Group. A chance to meet and talk with other local Amiga users, review software, and exchange public domain software. Meetings 7:30 p.m., 1st Tuesday. Call Roy Wagner, (714) 892-5500 for more info.

Amiga Friends. Meets 3rd Monday of the month, 1 pm, at the Santa Ana campus of Rancho Santiago College, Bristol and 17th St., Room R124, Santa Ana. Contact Russ Kavanagh, (714) 898-2947. Call for more information, we'll see you there!

South (LA) County Amiga Users Group. A chance to meet and talk with other Amiga owners. Software reviews and public domain library. Meets at Mid Cities Bank in Bellflower

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on Lakewood Blvd., just south of 91 freeway, on 1st Tuesday at 7:30. Call Roy Wagner at (213) 832-3361 x4689 for more info.

San Fernando Valley Amiga User Group. Meets 2nd Thursday of the month, 7-10 pm, at American Legion, 7338 Canby Ave., Reseda. We've got demos, SIGs, newsletter, PD library, disk of the month, ANSWERS. Bring your AMI, we have lots of room now! Contact Randy Likins, (818) 709-0932.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, technical help, guest speakers, much more. Contact John Callaci or Mike Dalton (714) 630-8644/630-8711 for information.

Color America. Amiga SIG meets 1-3 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. For information contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

Amiga Tech Users Group #1. Meets 4th Tuesdays, 7 pm, University Union, Cal Poly Pomona. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Amiga Tech Users Group #2. Meets at Rosemead Community Center, 3936 N. Muscatel Ave., near Valley Blvd., Rosemead, 1 pm, 3rd Saturday of the month. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Citizens Veto. For users with an interest in socio-economic issues who might want to try their equipment in working a model of a new approach. Primarily graphics and numbers, minimal text. Ewald O. Schlachter, (415)452-0151.

Inland Empire Amiga User Group. Meets 7 pm, 3rd Tuesday of the month, California School for the Deaf, 3044 Horace St., Riverside. Contact Paul Corbet (714) 684-6245. Call for more information, we'll see you there!

LA Amiga Users Group, Meets 3rd Wednesday, 7:30 pm, Veterans Memorial Auditorium, Culver Blvd. at Overland Ave., Culver City. Contact Bill Simpson, (213) 661-7959. Call for more information, we'll see you there!

West Side Amiga Users Group. Meets 2nd Wednesday, 7:30 pm, John Adams Junior High School Cafeteria, 16th and Ocean Park Blvd., Santa Monica. Contact Stuart Sanders (213) 477-4728. Call for more information, we'll see you there!

APPLE

Original Apple Corps. First Apple group ever. SIGs for AppleWorks, Telecommunications, Educators, Macintosh. Meetings in the Santa Monica Mall, second Sunday of the month, 3rd floor Community room, 12 noon. Contact Rich Rollons (213) 378-0707, or Fred Duffy, (213) 396-5515.

The Orange Apple Computer Club meets 9 am-12 pm the first Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have over 700 members, ranging from beginners to certified Apple developers, and a large Apple II public domain software library. There are several very active special interest groups which include Apple III, educators, Apple II, modem and investors. For further info call (714) 770-1865.

South Bay Apple III User Group. Over 85 Apple III users share information, programs, group purchases, product demos. Special interest groups meet 1st Tuesdays. General meetings on IIIrd Tuesdays at 7:30 p.m., UCLA Harbor General Hospital, Room III. Corner of Vermont and Carson, off 110 Fwy. Contact Gary Fortune, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Tri City Apple User's Group (Glendale, Burbank, Pasadena). New group formed from merger of Pasadena and Wabash groups. Meetings are scheduled the third Thursday of the month at Casa Colina Neurological Learning Center, 50 North Hill St., Pasadena at 7:30 pm. Contact Marie Kaden at (818) 846-6682. Dues $12./yr.

North San Diego Apple Club. Meets 1st Tuesday of each month at Meadowbrook Middle School, Meadowbrook Lane, Poway, 7 pm. Contact Bill Walker (619) 579-9649 or Chuck Newby (619) 566-0387, P.O. Box 75, Poway, CA 92064.

SD Alllers. Want to start Apple III user group in San Diego area. Contact James Fair, P.O. Box 1592, Lakeside 92040, (619) 561-3270.

Applejacks of the Inland Empire. Primarily for Apple II users. Meets first Wednesday and third Thursday of the month, 7-9 pm, at Norman Feldheym Central Library, 555 W. 6th St., San Bernardino. Contact Scott Zehm at (714)883-2234 for information, or write Applejacks, P.O. Box 23025, San Bernardino, CA 92406.

Appleholics Anonymous of Ventura County. Software library, club BBS, newsletter, hardware and software demos. 150 members. Meetings sometimes vary—call to verify (805) 482-3501, 484-2611, 659-5326, 985-9781. Meetings 3169 Telegraph Road, Ventura, 9:30 am, usually 2nd Saturday.

APRICOT

Apricot Roundtable Group of Hapless Hackers (ARGHH!) An Apricot user's group is forming in east Long Beach, open to any Apricot, XI, F1, F2, F10 or FP user, or anyone else with MS- or PC-DOS and 3½" disk drives. Phone Jim Bliss at (213) 425-6302. Meetings 7–10 pm, 3rd Wednesdays or at such other time as membership decides, at 7215 Killdee St., Long Beach, CA 90808.

ASHTON-TATE

dBUG-dBASE Users Group. For all levels of dBase users from beginners to expert. Meets 3rd Monday each month, 7-9 pm, Blue Cross Bldg., 21555 Oxnard, Woodland Hills. For more info contact Bruce Ascough, (818) 789-0723.

dBASE III SIG of UCLA PC Users Group. Meets once per month in Santa Monica—date varies. Contact Tom Rombouts, 1428 N. Curson #6, LA, CA 90046, (213) 874-7471.

ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and club BBS. Dues $24.00/year, $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 131, Huntington Beach, 1 pm, fourth Sunday of the month (ST meeting same time and place on second Sunday). P.O. Box 9419, Fountain Valley, CA 92728 or (714) 838-3099 for more information.

West LA Atari Users Group. Come join fellow Atarians! Dues are $20.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first Wednesday of the month, 7 pm, Paul Revere Jr. H.S., 1450 Allenford Dr., Brentwood. Call John Scheid, pres., for more information (213) 829-7239.

Los Angeles Atari Computer Enthusiasts (LAACE). Join Los Angeles' largest and oldest Atari Users' Group, now in our 6th year. Enjoy our monthly meetings and newsletter. Participate in our educational SIG (Special Interest Groups) seminars and meetings. Learn how to get the most out of your Atari; access our hundreds of public domain programs; benefit from the help and experience available from our experts. Come as our guest on the 1st Tuesdays of the month (2nd Tues if holiday occurs in 1st week) at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. For full benefits, including member access to our 10 meg BBS, dues are $20/yr ($25 for entire family). Write P.O. Box 7752, Van Nuys, CA 91409 (include your phone number) for additional information.

Santa Clarita Valley Atari Computer Enthusiasts (SCV-ACE) invite you to join us. Meetings are the first Thursday every month from 7 to 9 pm at the Moose Lodge, 18000 W. Sierra Hwy., (1/2 mile north of Soledad Canyon Road), Canyon Country. For info call Bob at (805) 259-6540.

Atari Computer Enthusiasts Network (ACENET). Umbrella group representing many Southern California Atari groups. If you can't locate a user group in your area, contact John Tarpinian at 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

Hooked on Atari Computer Keyboard Society (HACKS). Meetings on the first Saturday of the month in the Burbank area. For more information contact John Tarpinian, 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

AA-Atari Users Group. Meets at Upland Public Library, 450 N. Euclid Ave. Atari 400, 800, XL/XE group meets second Tuesday, 6-9 pm. Call Juan Valdes, (714) 980-6841 for more info. 520/1040ST group meets fourth Thursday 6-9 pm. Call Jay McCarthy, (714) 829-8722 for more information.

MAST—Mid-Cities Atari ST. Meetings at 9025 E. Artesia Blvd., Bellflower, first Sunday, 7 pm. Contact Jane Hughes, 9701 E. Artesia Blvd., Bellflower, (213) 867-0626.

South Bay Atari Computer Enthusiasts (S.B.A.C.E.). Meets 2nd Tuesdays, 7:30 pm, VFW Hall, 1865 Lomita Blvd., Lomita. Meetings consist of guest speakers from software and hardware suppliers, demos by members, q & a periods, along with current Atari rumors. Newsletter, published 6 times a year, included with $20/yr membership fee. Write S.B.A.C.E., P.O. Box 83668, Los Angeles, CA 90083, for more information, or call Dick Reaser, (213) 645-7063.

Pasadena Area Local Atari Computer Enthusiasts (PAL-ACE). Meets monthly in the Monrovia area on the third Tuesday of the month. Contact Chris Roberts, sysop of PAL-ACE BBS, (818) 359-1697.

AUTOCAD

AutoCAD Los Angeles Users Group. Meetings fourth Thursday of the month (except November and December—Meetings Nov. 20 and Dec. 18), Church of Religious Science, 260 North Pass Ave, Burbank. Contact Tesfaye Abagaz, (818) 843-5770 (work).

COMMODORE

Club 64 National user group. Monthly newsletter, BBS, group purchasing, public domain software, much more. Contact: Robert Johnson, (213) 925-4049.

San Diego Commodore Users Group. Meets third Wednesday, 7 pm, 2557 3rd Ave. (Women's Club), San Diego. For all Commodore machines. Contact Jane Campbell, (619) 584-2872 for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group. Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada

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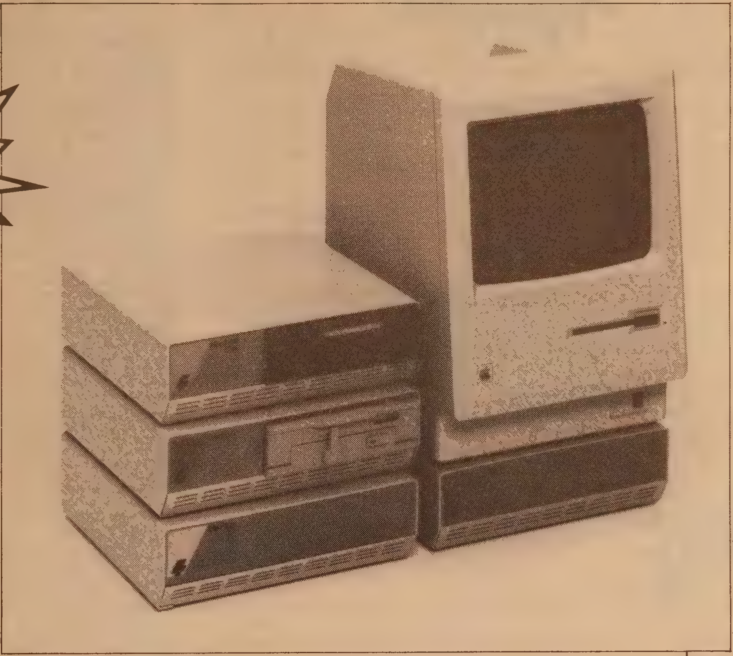

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San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano. This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 4th and Newport, Tustin, fourth Sunday of the month, 10:30 am. Contact Ellis L. Higham, corresponding secretary, P.O. Box 8342, Orange, CA 92664, (714) 554-9222.

Hollywood User Group (HUG) for Commodore computers. Meets 2nd Saturday of the month at Plummer Park, Conference Room, 7377 Santa Monica Blvd., West LA at 12 noon. Contact HUG BBS (213) 874-8256 (24 hrs) or write HUG, P.O. Box 38313, Hollywood, CA 90038.

Southern California 64 Users Group. Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center on Bellflower, just south of 91 Freeway, 7 pm, 3rd Tuesday of every month. Contact Joe Allain, 3852 Riverton, Studio City, CA 91604, (818) 985-2647.

C-128 West UG. User group for owners of the Commodore C128, from beginner to advanced; PD software available. New group still assessing the needs and interests of members. Intend to network with other user groups on C128 software. Meetings 2nd Tuesday, 7:15 pm, McKinley School in Santa Monica, Santa Monica Blvd. and Chelsea. Contact Don Campbell (213) 828-9308.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

Commodore Creations Users Group (CCUG). We offer library, newsletter, and other services; upcoming BBS; soon to be member of Commodore World. Meets 2nd or 3rd Sunday of each month 2-4 pm. Membership dues $26 per year. Call or write for info: Brian R. Klotz, 1135 Coronet Ave., Pasadena, CA 91107 (818) 351-8198.

Back-Country Commodore Club. Meets first Thursday 7 pm, Ramona Lutheran Church on 14th St. Check us out for relaxed, informative group discussions. We're here to help those with problems and to promote better uses of Commodore 64s, 128s, and Amigas. Contact Gerry White at (619) 789-3209, 511 14th St. #D-13/P.O. Box 373, Ramona, CA 92065. Meetings at 617 16th St., Ramona, CA 92065, 7 pm, 1st Thursday each month.

General Dynamics Commodore Computer Club. Meets third Tuesdays, 4:30 pm, Convair Rec. Assn. room C. Commodore 64 and 128 only. Contact Al Wilson, (619) 429-6790 for information.

C.U.B.E. Commodore Users, Buffs, and Enthusiasts meet first and third Mondays of each month, 7:30 pm, East Side Christian Church, 668 Obispo, Long Beach. Contact Lynn Cothern, 2005 Palo Verde #163, Long Beach, (213) 421-1041 modem.

Com-Pacs. Meetings and/or copies of public domain software and discussion of problems. New computer C64/128 technologies. Sales and swaps of equipment. Meetings at 2354 Elmgrove St. Los Angeles, CA, Saturdays, 3 pm. Contact Lon Damiani, (213) 222-2277.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Pacific Computer Club (Commodore). Meetings 391 S. Madison, Pasadena, 2nd Thursday, 7 pm. Contact Norman Sauppe, (818) 792-9840.

FCUG/SixtyFourum. PD library, newlsetter, meeting 3rd Saturdays, 8:30 am. Contact George Bearden, P.O. Box 16098, Fresno, CA 93755, (209) 291-7053. BBS (209) 431-6288.

Central Coast Commodore Users Group. Meets 3rd Tuesday of each month. Contact Gilbert Vela, 4237 Plumeria Ct., Santa Maria, CA 93455. CCCUG BBS (805) 934-2216, 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads.

Diamond Bar User Group (DBUG). The Diamond Bar User Group is dedicated to the Commodore line of computers, C64, C128, and the Amiga. The club has a large public domain software library base, especially Commodore CP/M. Free raffles, technical discussions, software demonstrations, and the monthly freebie disk can be found at most any meeting. Meetings 2nd and 4th Wednesdays, 7 pm, Diamond Bar Library, 1061 S. Grand Ave., Diamond Bar, CA. Contact David Dietzel, (714) 947-1882 for more information.

South Orange County Commodore Programmers and Users (CPU). Meetings at Great American Savings, 23688 El Toro Road, El Toro, third Saturdays, 9 am. Contact Don Gribble, President, 25401 Champlain Rd., Laguna Hills, CA 92653, (714) 830-2430 or (714) 855-8320.

West Orange County Commodore User Group. Meetings 1st Sundays, 1 pm, Mercury Savings, Buena Park, corner of Valley View and Lincoln. Write for info: P.O. Box 6441, Buena Park, CA 90622; or call Mark Stanford, (714) 772-4182 or Art Collins (714) 821-0195.

Bits & Pieces Amiga Group of Anaheim. Meets every Tues-day 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, technical help, guest speakers, much more. Contact John Callaci or Mike Dalton (714) 630-8644/630-8711 for information.

The Pasadena Commodore Computer Club meets the first and third Wednesday of the month at 7 pm in the Circadian Room of the cafeteria on the campus of Pasadena City Col-lege, SE corner of Colorado and Hill. For more information write to PCCC, P.O. Box 1163, Arcadia, CA 91006, or call (818) 447-2212 after 2:30 Pacific time.

CORDATA

Cordata Users Group. Meets 2nd Fridays, 7 pm. 20630 Lassen St., Chatsworth. Contact Alicia Fahey, (818) 709-6202 for information.

DEC

DECUS Inland Empire PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meets Cal Poly-Pomona campus, Library Bldg15, Room 12, 7:30 pm 3rd Tuesday of each month. Contact Jan Snyder, 380 Verona St., Upland, CA 91786, (714) 620-7511 ext. 4376.

DECUS Southern California PC-LUG. Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software/applications assistance available; FIDO bulletin board. Meets 10:30 am, 1st Saturday of the month, Press Telegram Bldg., 3rd Floor, 604 Pine Ave., Long Beach, CA. Contact Bill Davis, 1457 W. 219th St., Torrance, CA 90501. (213) 827-4600.

DECUS Rainbow Pacific PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meetings at Digital Equipment Corporation, 6101 W. Centinela Ave., Culver City, CA 90230, 7 pm, 2nd Wednesday of each month. Contact Don Braums, 3312 Summertime Lane, Culver City, CA 90230, (213) 202-1784.

EASYBUSINESS

Easybusiness Systems Users Group. CPAs, Consultants, and other business people interested in Computer Associates Easybusiness Systems' Accounting Software. For information, contact Gary Robinson (213) 398-6544.

EPSON

Cursor Club Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

San Fernando Valley Epson User Group. Meetings at Fallbrook Square Community Room "The Meeting Place" off the Food Court in the new Fallbrook Mall, 6633 Fallbrook Ave., Canoga Park, between Victory and Vanowen. Meets 3rd Wednesday of each month at 7 pm. Contact Pat Denslow, (818) 881-4029 for information.

Epson Users Group of Orange County. 6075 Jeffrey Mark St., Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego. P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group. 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX. 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group. 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

TUG-NET Epson SIG meets 2nd Wednesdays, 7 pm, Mercury Savings, 5201 Laurel Canyon Road, North Hollywood. Call (818) 705-6300 for information.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

HEATH

Los Angeles HUG (Heath Users Group). A support group for users of Heath/Zenith computers. Monthly speakers, software library, information exchange, newsletter. Meetings open to visitors. Meetings at 2309 S. Flower St., LA 90007, first Thursday of each month at 7 pm. Call Tom Davis for information at (213) 462-2642.

HEWLETT-PACKARD

Club of Hewlett - Packard Hand-Held Users (CHHU). HP handheld users worldwide support CHHU as a noncommercial, open, independent club dedicated to applying today's machines and making a contribution to the true personal computer of tomorrow. Send SASE for more info to Richard J. Nelson, 2545 W. Camden Place, Santa Ana, CA 92704, or call (714) 754-7757 for meeting directions.

LA-SCRUG. Hewlett - Packard Series 100 business computer user group. Demonstrations and seminars on HP software and equipment. Meetings at 5161 Lankershim Blvd., North Hollywood, 7-9 pm, 2nd or 3rd Thursday of the month. Contact Dave Mark, P.O. Box 60975, Pasadena, CA 91106, (818) 794-4969.

IBM

The Greater South Bay IBM PC Users Association. Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 398-8153.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Thursday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567. DOS SIG meets 3rd Mondays, 7 pm, Sears S&L, Van Nuys. Call (818) 701-0512 for information. BBS (818) 882-6045.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Pasadena IBM User's Group. Meets 3rd Wednesday of each month at Cal Tech, Steele Building, Room 102. For more info send SASE to Steve Bass, 711 E. Walnut Street #306, Pasadena, CA 91101, (818) 795-2300.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

The Foothill Computer Club. An IBM-PC users group. CCCUG — Crescenta-Canada-Compatible Users Group. P.O. Box 1265, La Canada, CA 91011, (818) 790-6672. Meetings 1st Wednesday of the month at 6:30 pm at the Glendale Federal Bank, 2350 Honolulu, Montrose, CA. For newsletter send SASE to above address.

NOCCC Lotus & Business SIG. Subgroup of North Orange County Computer Club. Meets first Sundays at Chapman College in Orange, CA, 11:15 am. Lotus 1-2-3 and business application demos, speakers. Call to verify dates, address: Vance Joachim, (714) 998-8080. P.O. Box 3616, Orange, CA 92665.

The Riverside IBM Computer Club. Meetings at Computerland Riverside, Monday 7 pm. We specialize in software demonstrations, sharing of public domain programs, and mutual problem solving activities. Contact Jimmie E. Heidecke,. (714) 685-5407 for info.

Orange Coast IBM PC User Group. A not-for-profit organization open to anyone with or considering the purchase of an IBM PC or compatible computer. Monthly meetings, usually on the last Saturday of the month, consist of one or two guest speakers, a short business session and a period for random access. OCIPUG has public domain and user supported software, a monthly newsletter and a bulletin board. Membership is $20 per year. Meetings at Orange Coast College, Science Hall, Costa Mesa, last Saturday of the month, 9 am–12 noon. Contact Tom Sutro, P.O. Box 6100-211, Costa Mesa, CA 92628, (714) 850-0474.

Valley Computer Club. IBM PC Users Group meets first Wednesday each month. The group is part of Southern California's original computer club. Its purpose is to distribute public domain software and exchange info on the PC. Meetings at 2006 W. Magnolia Blvd., Burbank, 7 pm. Contact Sy Lieberman, (818) 981-9593.

Kern Independent PC User Group (KIPUG). Meets the 2nd Thursday of each month beginning at 7 pm at the County Superintendent of Schools Boardroom, 5801 Sundale Ave., Bakersfield. Contact Jim Harrer, P.O. Box 2780, Bakersfield, CA 93303, (805) 395-0223.

Bits & Pieces IBM of Orange County. Meets at 1130-A N. Kraemer Blvd., Anaheim, every Saturday at 10 am. Call John, (714) 630-8644 for more information.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. contact Mike Regan,. President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Thousand Oaks Personal Computer Club (TOPCC). Meets fourth Thursday, except November and December (3rd Thursday), at Home Federal Savings, 164 W. Hillcrest Dr., Thousand Oaks—6:30 pm beginners, 7:30 regulars. Group is five years old and has approximately 150 members. Contact Bob Tracy, (805) 482-7092 for more information.

Southwest PC Users Group. All computer users are welcome. Meetings 3rd Saturday of each month; call for meeting place. Christine Tripp, (213) 935-4105.

Tulare County PC. Meetings at Genesis Computers, 3rd Thursday each month. Call Roger Jenan, (209) 733-8204 for information.

Claremont Computer Club. This club is for any interested IBM PC or compatible users. Meetings start at 7:30 pm on the 3rd Monday of the month. Call (714) 626-2268 for meeting location and information.

KAYPRO

Lakewood/Long Beach KUG is a group of Kaypro computer owners dedicated to helping each other solve problems and share information and public domain software. The meeting is open to all. Meetings at Midcities Bank, 9025 Artesia, Bellflower, CA, 2nd Wednesday of each month; 7 p.m. Contact Melvin Pasley, 4566 Shadeway Rd., Lakewood, CA 90713, (213) 421-3094.

Kaypro UG, 3134 N. Palm Shields, Fresno, CA 93704.

K-West, Orange County Kaypro users group. Meetings 2nd Monday of the month, Glendale Federal Savings, 100 Newport Center Drive, Newport Beach.

Club 16. Meets once a month in Costa Mesa at 2790 Harbor Blvd., (CBS Store) to share knowledge of the 16 bit world. It is a small group so that everyone can get to know each other and share. Large public domain library. Contact Peggy Lloyd, (714) 645-9868 for information.

LA Kaypro Users' Group. Primarily CP/M users, all brands welcome. Meets 3rd Tuesday, 6:30-9:30, Beverly Hills High School, 241 Moreno Ave., 3rd floor cafeteria, near Olympic and Spalding. Contact Allyn Franklin or Barry Cole, (213) 278-3748 or (213) 390-3851 after 11 am please.

Kayos Kaypro Users Group. Kayos Kaypro User Group invites Kaypro and CP/M users to meetings at TRW in Redondo Beach, 6:30 pm, third Monday of the month. (213) 379-8339 for details.

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. Call (818) 882-1693 for information.

LEADING EDGE

Leading Edge User's Group. A user's group of predominantly Leading Edge users and other similar machines with high clock speed. Public domain software, demos of software/hardware. No fees. Meetings 7:00 pm, 2nd Wednesday of the month, 12792 Valley View, Suite F, Garden Grove, Contact Bruce Fruchter, (714) 891-2001 for information.

LOTUS

Los Angeles Lotus Users Group. Demonstrations, problem-solving, third-party applications, etc. For Lotus 1-2-3 and Symphony. Informal and fun. 7–9 pm, Burbank church of Religious Science, 3rd Thursday each month. Take 134E to Pass, N. 1 block. Call Don Roark, President, (818) 905-1441 for information.

MACINTOSH

Los Angeles Macintosh Group (LAMG) Be a part of the best Mac group in So. Calif. Many SIG and local groups to choose from including desktop publishing, OMNI, business, education and more. Monthly main meeting at McKinley Elementary School, Santa Monica Blvd. at Cloverfield, Santa Monica. Membership $25 annually includes 12 issues of MacDigest newsletter, access to public domain library, discounts at local stores. Call Eric Anderson, (213) 278-LAMG for information.

Ventura County Macintosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

Mac Valley Users Group. For $20/yr. membership fee you too can enjoy meetings chock full of software/hardware presentations, public domain software library, Mac articles index, software and accessory raffles, and help hotline. Broad range of users, very friendly to novices. Meetings at Burbank High School Cafeteria, Burbank Blvd. at 3rd St., Burbank, CA, third Tuesday of the month, 7:30 p.m. Contact Ruth Stever, P.O. Box 4297, Burbank, Ca 91503, (818) 848-1277.

MAC-HACers. Macintosh computer club for Hughes Aircraft employees only. Meetings 3rd Wed. each month, H.E.S.E.A. Club House, 1216 Imperial, El Segundo, CA 90745, across from LAX, 5 pm. Contact Bud Grove, (213) 606-2212, 5am-3pm, (213) 549-9664.

Orange Apple Macintosh Group. The Macintosh Meeting of the Orange Apple Computer Club meets 1 pm-4 pm the 1st Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have the best of the public domain software for the Mac, and several fun special interest groups which include Fast Start, Mac Modem, and Deciphering Mac Public Domain. For further info, call (714) 770-1865.

Mac Orange. Bi-monthly newsletter, monthly meetings, largest Macintosh user group in Orange County (400+ members). $20 annual dues. Meetings Johnson Center, Santa Ana College, 3rd Wed. Contact Taylor Barcroft, P.O. Box 2178, Huntington Beach, CA 92647, (714) 842-0518 for info.

MacBuddhist. Learn about computer assisted dharma study and application to daily living. Network of on-line Bodhisattvas sharing material crossing sectarian lines. Monthly meetings, last Saturday of the month. Contact secretary, College of Buddhist Studies, 933 South New Hampshire, Los Angeles, CA (213) 739-1270.

Corporate User Groups SIG of Los Angeles Macintosh User Group establishes communication between leaders of Macintosh User Groups of companies in the greater Los Angeles area. The main purpose of the group is to share information on Macintosh use in corporations. It also consults

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COMING NEXT ISSUE

In our next issue, we'll premiere a special quarterly section called "Mac At Work," in which we examine products and solutions using the Macintosh in business environments. This issue's emphasis will be on the current generation of word processors for the Mac, looking at the advantages of different packages for particular situations.

We'll look at Apple's current crop of newly-announced (and long-awaited) products. And we'll discuss the issue of connectivity in various environments, with features on products and services relating to Local Area Networks, as well as links between different computer types and operating systems.

Also, Birrell Walsh will offer a comparison of two windowing products for the IBM, Microsoft *Windows* and Quarterdeck's *Desqview*.

These stories and much more await you in the May issue of MicroTimes, available April 3.

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All Wherehouse locations and at a newsrack nearest you company recreation clubs in starting and supporting company Macintosh groups. Contact Charles Shipp, (213) 970-6300w, (213) 833-9186h, for more information.

San Gabriel Valley Mac Users Group. Meets once a month to disseminate information about the Macintosh. Meetings are held on the first Thursday of every month at the City of Hope in Duarte, 7:30 pm in cafeteria complex Room B. The SGVMUG has special interest groups such as Power Users' SIG and a Novice SIG. Public domain library, monthly newsletter. Membership is $20 per year. Contact Frank Chavez on the 24 hour information line (213) MUG-ICON, or write SGVMUG, P.O. Box 792, Sierra Madre, CA 91024.

MORROW

West LA Morrow User's Group /The Morrow Minority. 40 dedicated members, with special emphasis in WP; PD library. No dues, but $1 at door to pay for refreshments. Some classes and informal newsletter. If new, call to reserve space: Dr. Bernice Ennis, (213) 276-9096, 1833 Franklin Canyon Dr., Beverly Hills, CA. Meetings 2nd Wednesday of the month.

LA Morrow User Group. Meets 3rd Thursday each month, North Hollywood Recreation Center, 11430 Chandler Blvd., North Hollywood. Contact Jack Byers, (818) 347-7283 for information.

NEC

Orange County NEC Users Group (OCNUG). Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

The Los Angeles Area NEC APC Users Group meets on the first Saturday of each month at 3 pm at the I/O Interface Computer Mart, 6241 West 89th St., Los Angeles, CA 90045.

Telephone (213) 410-9824. There is no meeting in January, and occasionally a meeting may be cancelled or postponed, so it is best to call before coming.

OLIVETTI

Olivetti PC User Group forming. Send SASE to Stan Cory, 29500 Heathercliff Rd. #86, Malibu, CA 90265, or call (213) 457-3879.

OMNIS 3

Omnis 3 User Group. Meets every third Wednesday of the month at Grant St. Elementary School in the auditorium. Address is 2368 Pearl St., Santa Monica. Time is 7:30 pm. The use of Omnis3 and Omnis 3+ in data processing information management systems is covered, from setup to advanced features. Expert and novice welcome. Call Zachary Sempers at (818) 701-1355 for information.

OSBORNE

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. BBS (818) 882-6045, 8-N-1, 1200 baud, 24 hours.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. Thus we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings first three Tuesdays of the month, 6:30–9:30 pm, in the meeting room at the rear of California Federal Savings Bank, 285 S. Lake Ave., Pasadena. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Osborne National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlefstein, (818) 709-6969.

PARADOX

Southern California Paradox Users Group. Anyone with an interest in the relational database Paradox please send an SASE to Brian Smith, 350 Palos Verdes Blvd., Redondo Beach, CA 90277. Meetings are being held in LA and Orange County.

RADIO SHACK TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

OCTUG-Orange County TRS-80 Users Group. Meets the 3rd Sunday of each month at Hashinger Auditorium, Chapman College, on Center St. between Palm and Sycamore, Orange, CA, 12:30 pm. Devoted to the Tandy line of computers (TRS-80 Models 1,3,4 and the new Tandy 1000, 1200, 2000, 3000). We are slowly getting more people in the MS-DOS Special Interest Group. We welcome any and all new people. Contact Franco Collino, (714) 750-0887.

San Gabriel Valley TRS-80 Users Group. Supporting users of TRS-80 and Tandy computers. Meets 2nd Friday of each month at Arcadia Park Senior Citizens Center at 7:30 p.m. Monthly newsletter, various SIGs, lotsa fun & info. Contact Dan Dresselhaus. (818) 914-5831 days.

VTUG (Valley TRS-80 User Group). Devoted to users of TRS-80 Model I, II, 4, 4P, LNN or MAX-80. Speakers, presentations, raffle drawing, refreshments. No admission or membership fee, new members welcome. Meetings at Glendale Federal Savings, 7129 Topanga Canyon Blvd., Canoga Park, 3rd Thurs., 7:30 pm. Contact Fred Blechman, (818) 346-7024.

VTHGValley TRS80 Hacker's Group. Programming and problem solving for Models 1, 3, and 4. No vendors, no machines. No dues. No sweat. Bring a blank disk and get NEW public domain software. Meetings 1st Fridays, 7:30 pm, Valley Plaza Park Auditorium, 12240 Archwood St., North Hollywood. Call Eric Bagai at (818) 982-0467 for more information.

Tandy 1000 (The MUG) Meets fourth Wednesdays, 7 pm, 9027 E. Artesia, Bellflower, CA. Contact Dick Sherwood, 4014 Centralia St., Lakewood, 90712, (213) 421-4014. The MUG RBBS (213) 425-0022, members only.

Color America. Radio Shack color Computer SIG meets 2:30-5 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. Contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

The Los Angeles-Wilshire Color Computer Users' Group, a TRS-80 Color Computer Users' Group, meets the 2nd Saturday of each month, 12:30 pm-5:30 pm in the Felipe de Neve library's community room, 2020 W. 6th, Los Angeles. Call Milton, (213) 558-4909.

United Computer Federation-San Fernando Valley Chapter. Meets the fourth Tuesday of each month at the Tarzana Radio Shack, 18545 Ventura Blvd., 1/2 block west of Reseda Blvd. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Pete Ellison, chapter president, at (818) 840-8902.

United Computer Federation-Los Angeles Chapter. Meets the fourth Thursday of each month at the Church of Christ recreational building, corner of Clark and Park streets, just off the 91 freeway in Bellflower. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Gary James, chapter president, at (213) 420-7632.

United Computer Federation-Orange County Chapter. Meets the second Sunday of each month at the Mercury Savings building on Edinger Ave., 1 block north of Beach Blvd. in Westminster. Meeting starts at 1:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Allen Nedrow, chapter president, at (213) 692-3073.

SBT

The Orange County SBT Users Group is being formed and is seeking members who are interested in an atmosphere that promotes the better understanding and more efficient use of the SBT Accounting Software. Contact Jay Rubin, P.O. Box 5145, Newport Beach, CA 92662, (714) 720-8171.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

Sanyo Users Group of LA (SUGLA). Devoted to users of Sanyo MBC 550/555 micro business computer. Guests welcome. Dues $15/yr. Speakers, presentations, public domain software library, information, new hardware and software reviews. Meetings 2nd Wednesdays, 7 pm, USC School of Medicine, Norris Medical Library, Conference Room Downstairs, 2025 Zonal Ave., LA. Contact Fred Blechman, (818) 346-7024.

TEXAS INSTRUMENTS

LA 99er Computer Group. TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3301 Torrance Blvd. (corner of Madrone), Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club. Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

TI-West (Los Angeles West Side Area). Meets at DeCoursey Engineering Laboratory, 11828 W. Jefferson Blvd., Culver City, on the 3rd Monday of each month. For information, contact Lew Howard at (213)397-9668.

San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TI Riverside UG. Supporting the TI 99/4A. Meetings at Collett School, 3rd Thursday, 7 p.m. Contact Ed Butcher, 3523 McKinley St., Riverside, (714) 686-0336.

San Fernando Valley TI 99/4A User Group. Library, Workshops, Newsletter, How To? For further information call Jim Edwards, (818) 248-9558, 5-10 pm. Meetings 2nd Wednesday of the month, 7:30 pm, Doctor's Conference Room, Sherman Oaks Community Hospital, 4929 Van Nuys Blvd.

Antelope Valley TI UG. TI User Group. Meetings at Palmdale Culture Center, 3rd Wed., 7 pm. Contact Len Rouw, 38540 26th St. East, (805) 947-6270.

El Toro 99 Home Computer Users Group. The ET-99 Home Computer User Group meets to demonstrate programs, equipment, and discuss techniques. Contact Ken Baldwin, 23065 Sonoita, Mission Viejo, CA 92641, (714) 855-0480. Meetings at Mercury Savings and Loan, 1-5 and Lake Forest, El Toro, 2nd Saturday of each month 9 am - 12 noon.

Tri-Valley 99'ers. We have what you're looking for! Interesting guest speakers, software/hardware demonstrations, large group library, monthly newsletters. We serve the entire Conejo Valley and beyond! Contact Steve Mehr (805) 496-8725 or Chuck Salvatore, (805) 527-4129 for more information.

BUG (Brea 99er's Users Group). Meets the first Monday of the month at 7:30 pm at the Western Federal Savings meeting room, #10 La Habra Fashion Square, corner Beach and Imperial, in La Habra. For further information call Bob August at (714) 871-3405.

TIMEX-SINCLAIR

Timex-Sinclair. South Bay and West Side groups. Call John W. Petersen at (213) 545-9581 anytime or Dr. George Kuby (213) 201-2014 after 3 pm for more information.

TOMY

Tomy Tutor computer user group. Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

VICTOR

West Los Angeles Victor Users Group (WLA-VUG). Victor 9000 users - you are not alone! Meet other users. Free V9000 software & purchasing discounts for members. Victor-specific bulletin board (818) 989-2216. Meetings at 8651 Olin St., LA 90034, 7 pm, 3rd Thursday, every month except December. Contact Roger Goodman, (213) 558-8363.

Orange County Victor 9000 User Group. Meets second Friday of the month at 7:30 pm, Cal State Long Beach, Palo Verde St., Engineering Bldg. #2, Room 304, Long Beach. For information write or call Don Henderson, 9350 Bolsa Ave. #8, Westminster, CA 92683, (714) 894-0073.

WANG

Wang WP Users Group. Meets 4th Thurs. of each odd month, 6 pm. Newsletter, speakers, information network. Call for meeting place: Steven Hirsh, (213) 255-5515, or write 2858 El Roble Drive., Los Angeles 90041.

WORDSTAR

WordStar User Group LA. Now forming. for all WordStar users, regardless of computer. Discussion, lectures, presentations, & demos, including enhancement products. Shortcuts & discount purchases. All experience levels. Call for info about first meeting: Ken Adler, (818) 501-4798, (818) 783-4533.

XSCRIBE

X.C.E.L. (XScribe Court Reporters for Education and Learning). XScribe users can share knowledge, have sessions on resolving problems encountered, and keep abreast of activities in the C.A.T. field. Contact Diane Altshuler, XScribe Corp., 3366 N. Torrey Pines Ct. Suite 300, La Jolla, CA 92037. (800) 854-2919.

ZENITH

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

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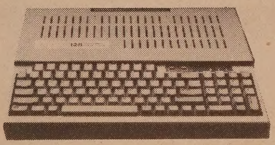

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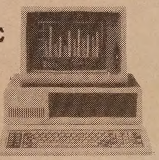

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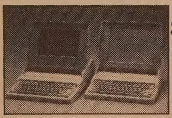

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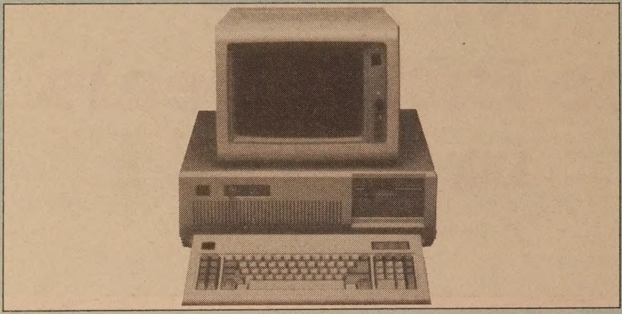

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